GV-8E

SERVICE MANUAL

AEP Model
UK Model
E Model

VIDEO
WALKMAN
U MECHANISM

This manual contains the Spplement-1, -2.

SPECIFICATIONS

System

Video recording system	Rotary two-head helical scanning FM system
Audio recording system	Rotary head, FM system
Video signal	CCIR system, PAL color
Usable cassettes	8 mm video format cassettes
Tape speed	SP: approx. 2.0051 cm/sec. LP: approx. 1.0058 cm/sec.
Recording time	SP mode: 1.5 hours (with Sony P5-90 cassette) LP mode: 3 hours
Playback time	SP mode: 1.5 hours LP mode: 3 hours (with Sony P5-90 cassette)
Fast forward/rewinding time	Approx. 7 minutes (with Sony P5-90 cassette)

LCD section

Picture	3 inches measured diagonally 6.2 cm × 4.6 cm ($2^{1}/_{2} \times 1^{7}/_{8}$ inches)
Screen type	TN LCD/TFT active matrix method Total picture-element number: 92,160 Effective picture-element ratio: more than 99.9%

Tuner section

Channel coverage	VHF: 2 – 12 channels UHF: 21 – 69 channels
Aerial input	75-ohm minijack for VHF/UHF (For TV program recording only)

Inputs/outputs

Video input	Phono jack, 1 Vp-p, 75 ohms, unbalanced, sync negative
Video output	Phono jack, 1 Vp-p, 75 ohms, unbalanced, sync negative
Audio input	Phono jack, −10 dBs (0 dBs = 0.775 Vrms), input impedance more than 47 kilohms
Audio output	Phono jack, −10 dBs (250 mV) at load impedance 47 kilohms, output impedance less than 10 kilohms
Speakers	8 ohms, 250 mW

Timer section

Clock	Crystal lock
Time indication	24-hour cycle
Timer setting	Only for recording, 1 event/24 hours

— Continued on next page —

MICROFILM

8 VIDEO TV RECORDER

SONY®

General

Power requirements	6 V
Power consumption	7.1 W (for continuous playback)
Operating temperature	0°C to 40°C (32°F to 104°F)
Storage temperature	−20°C to +60°C (−4°F to 140°F)
Dimensions	129 × 67 × 213 mm (w/h/d) ($5\frac{1}{8} \times 2\frac{3}{4} \times 8\frac{1}{2}$ inches)
Weight	Approx. 1.15 kg (2 lb 9 oz) not incl. battery pack
Accessories supplied	Headphones (1) Signal splitter (1) Carrying case (1) Battery pack NP-55 (1) AC power adaptor AC-V30 (1) Lithium battery (1)

AC-V30

Power consumption	20 W
Power requirements	100−240 V AC, 50/60 Hz
Output voltage	DC OUT: 7.5 V, 1.6 A in operating mode Battery charge terminal: 10 V, 1.3 A in charge mode
Operating temperature	0°C to 40°C (32°F to 104°F)
Storage temperature	−20°C to 60°C (−4°F to 140°F)
Dimensions	Approx. 67 × 39 × 138 mm (w/h/d) ($2\frac{3}{4} \times 1\frac{3}{8} \times 5\frac{1}{2}$ inches) including projecting parts and controls
Weight	Approx. 310 g (11 oz)

Design and specifications subject to change without notice.

List of Recommended Accessories

		Page
Battery pack	NP-77	❿
	NP-55	❿
	NP-22 or NP-22H	❾
Battery adaptor	NPA-22	❾
Battery charger	BC-55 (not available in UK)	⓭
AC power adaptor	AC-V30	⓮
	AC-V55	⓯
DC pack	DCP-55	⓯
Battery case	EBP-55	⓬
Car battery cord	DCC-16AE	⓯
Color video camera	CCD-G1E	
RFU adaptor	RFU-89EKA	
Edit selector	SB-V1	
Connecting cord	VMC-910MS/920MS (1m/2m)	
	VMC-710M/720M (1m/2m)	
	VMC-810S/820S (1m/2m)	

Carrying case (only for this unit)	LCS-GV8
Carrying case (for this unit and the accessories)	LCH-GV8
Close-up viewer (to enjoy the magnified picture)	VCV-GV8
Car connecting pack (connect to the AUDIO OUT terminal so that you can listen to the sound with the car stereo)	CPA-2

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

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SUPPLEMENT-1

SUPPLEMENT-2

SECTION 1
GENERAL

This section is extracted from instruction manual.

Features

For details, refer to the pages indicated in ●.

With Sony GV-8E video TV recorder, you can;
— view playback picture of 8mm video tapes. ●
— view TV programs. ●
— record TV programs. ●

In addition, if you connect an optional video camera to this unit, you can record pictures through the camera and view them immediately.

Compact and lightweight design which allows you the outdoor use.

Other features

— Timer recording ●
— Sleep timer which turns the power off automatically ●
— Picture can be muted when it is not necessary: e.g. when viewing pictures with another TV/monitor which is connected to this unit or when listening only to the sound. ●

This unit uses 8mm video format cassettes. It records in the SP mode (approximately 2.0051 cm/second) and the LP mode (approximately 1.0058 cm/second) and can play back in the SP mode and LP mode.
The quality of the playback picture in the LP mode, however, will not be as good as that in the SP mode.

Television programs, films, video tapes and other materials may be copyrighted. Unauthorized recording of such material may be contrary to the provisions of the copyright laws.

PCM recording/playback is not possible with this unit. The PCM sound recorded with another recorder cannot be played back with this unit.

For using the recorder abroad, see page 49.

Precautions

Operation

- Operate the unit on 6–8.5V DC.
- For DC or AC operation, use the accessories recommended in this manual.
- Should any solid object or liquid fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
- Avoid rough handling or mechanical shock to the unit.
- Do not apply excessive force to the LCD.
- Remove and store video cassettes after recording or playback.
- Do not wrap up the unit and operate it because heat may build up internally.
- Avoid using and storing the recorder in the following locations.
  — Locations susceptible to vibration.
  — Locations exposed to strong magnetic fields.
  — Locations near TV or radio transmitters where strong radio waves are generated.
- Do not put the unit on the sand.

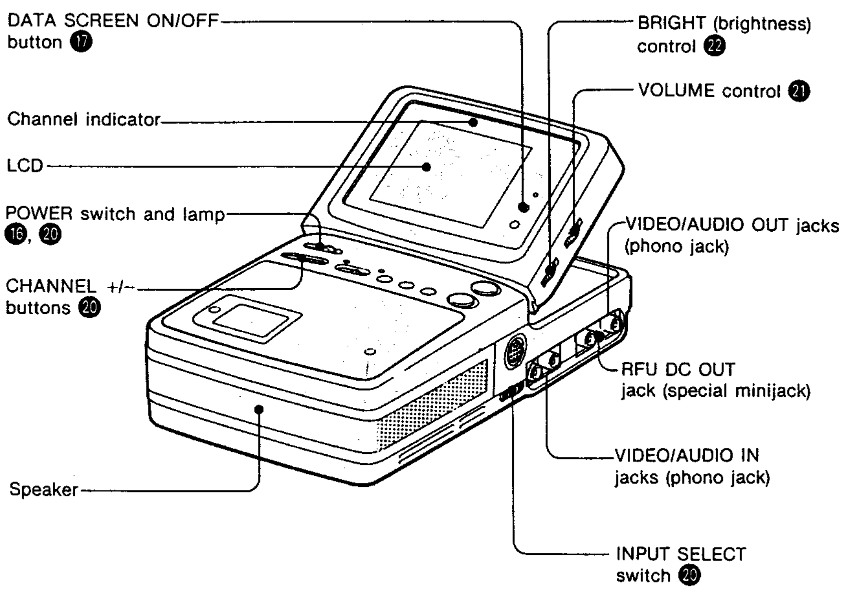
Care

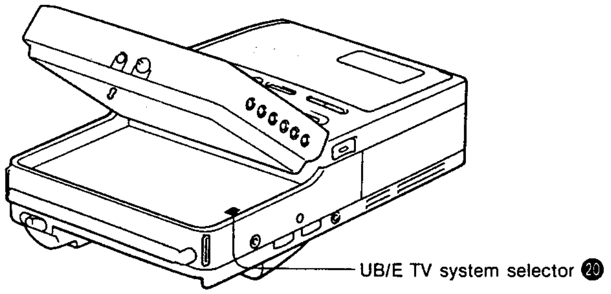
- When the unit will not be used for a long period of time, periodically turn on the power, operate the recorder and play back a tape for about three minutes.
- Clean the recorder body with a dry, soft cloth, or a soft cloth lightly moistened with a mild detergent solution. Do not use any type of solvent which may damage the finish.

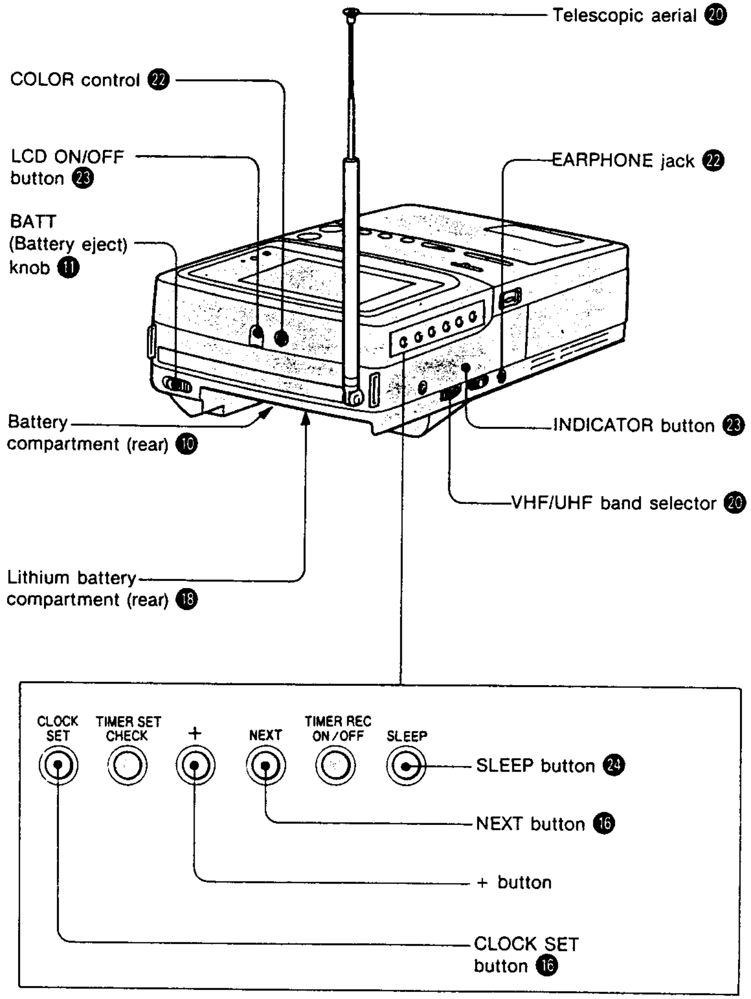
Location of Parts and Controls

Refer to the pages indicated in ● for details.

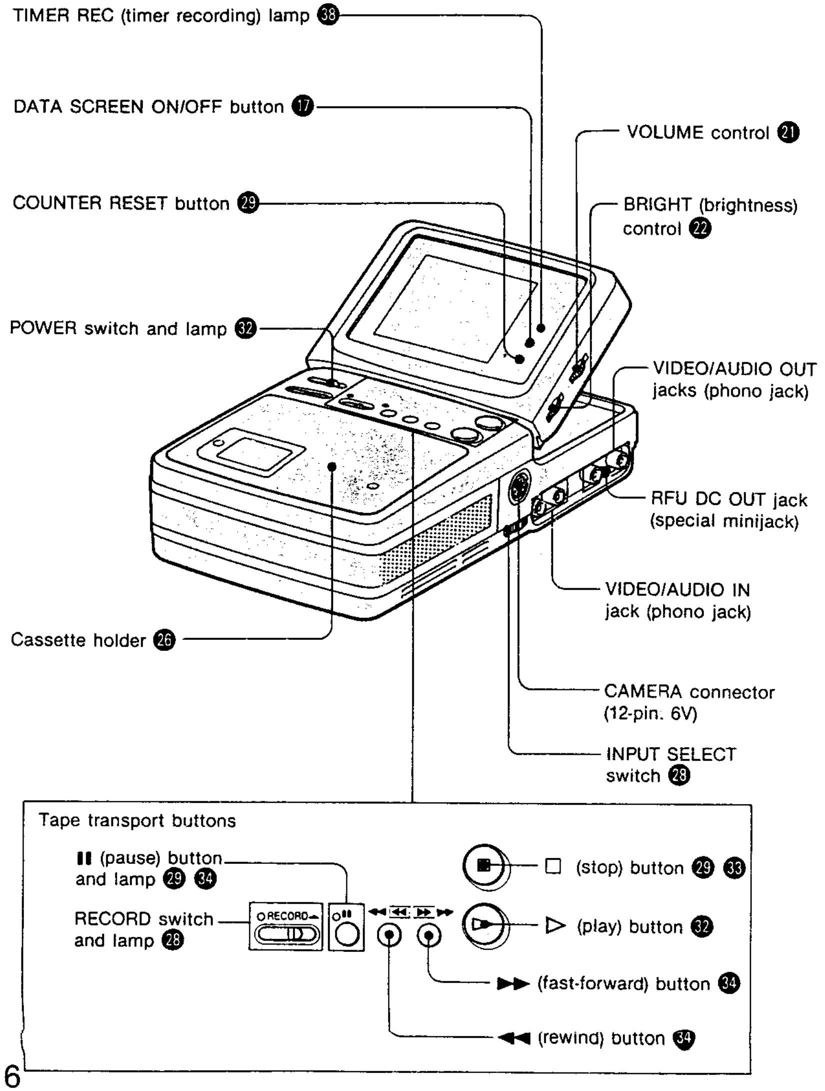
Parts for watching TV programs

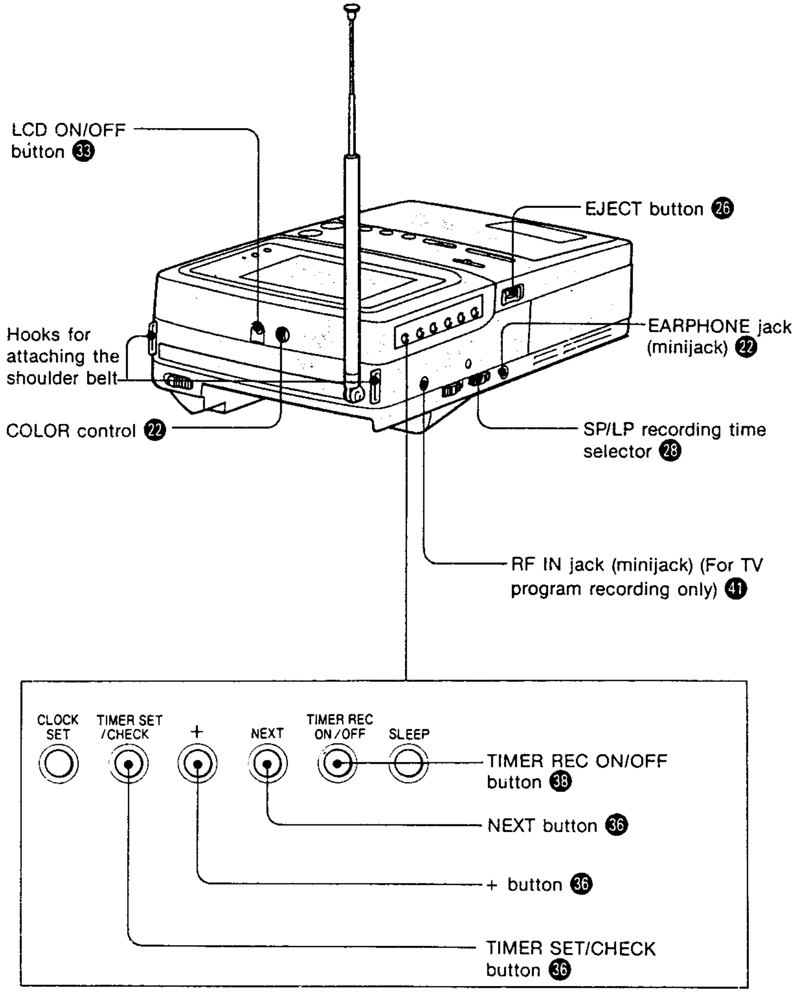

DATA SCREEN ON/OFF button ⑰
Channel indicator
LCD
POWER switch and lamp ⑯, ⑳
CHANNEL +/– buttons ⑳
Speaker
BRIGHT (brightness) control ㉒
VOLUME control ㉑
VIDEO/AUDIO OUT jacks (phono jack)
RFU DC OUT jack (special minijack)
VIDEO/AUDIO IN jacks (phono jack)
INPUT SELECT switch ⑳


UB/E TV system selector ⑳


Telescopic aerial ⑳
COLOR control ㉒
LCD ON/OFF button ㉓
EARPHONE jack ㉒
BATT (Battery eject) knob ⑪
Battery compartment (rear) ⑩
INDICATOR button ㉓
VHF/UHF band selector ⑳
Lithium battery compartment (rear) ⑱
CLOCK SET
TIMER SET CHECK
+
NEXT
TIMER REC ON/OFF
SLEEP
SLEEP button ㉔
NEXT button ⑯
+ button
CLOCK SET button ⑯

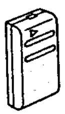
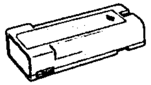
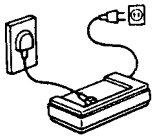
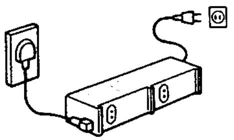
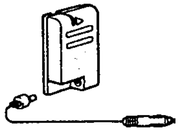
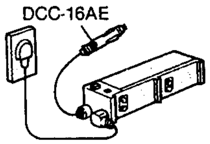
Parts for VCR playback/recording


TIMER REC (timer recording) lamp ㊳
DATA SCREEN ON/OFF button ⑰
COUNTER RESET button ㉙
POWER switch and lamp ㉜
Cassette holder ㉖
VOLUME control ㉑
BRIGHT (brightness) control ㉒
VIDEO/AUDIO OUT jacks (phono jack)
RFU DC OUT jack (special minijack)
VIDEO/AUDIO IN jack (phono jack)
CAMERA connector (12-pin. 6V)
INPUT SELECT switch ㉘
Tape transport buttons
II (pause) button and lamp ㉙ ㉞
RECORD switch and lamp ㉘
O RECORD
□ (stop) button ㉙ ㉝
▷ (play) button ㉜
▶▶ (fast-forward) button ㉞
◀◀ (rewind) button ㉞


LCD ON/OFF button ㉝
Hooks for attaching the shoulder belt
COLOR control ㉒
EJECT button ㉖
EARPHONE jack (minijack) ㉒
SP/LP recording time selector ㉘
RF IN jack (minijack) (For TV program recording only) ㊶
CLOCK SET
TIMER SET /CHECK
+
NEXT
TIMER REC ON/OFF
SLEEP
TIMER REC ON/OFF button ㊳
NEXT button ㊱
+ button ㊱
TIMER SET/CHECK button ㊱

Power Sources

Selection of Power Sources

Place	Power Source	Page
Outdoors	Battery pack NP-55 (supplied) or NP-77  or Battery case EBP-55 (with alkaline batteries)	⑩
	Battery pack NP-22 or NP-22H 	⑨
Indoors	AC power adaptor AC-V30 (supplied)*  or AC power adaptor AC-V55 	⑭
In the car	DC pack DCP-55 (with car battery cord)  or AC power adaptor AC-V55 with DCC-16AE or the car battery cord supplied with DCP-55  * AC-V30 cannot be used in the car.	⑮

All of above accessories except the AC-V30 and the NP-55 are optional.

Disconnecting the power source during recording or playback may damage the inserted cassette tape.
If this is done by accident, supply the power again immediately and turn the power on.

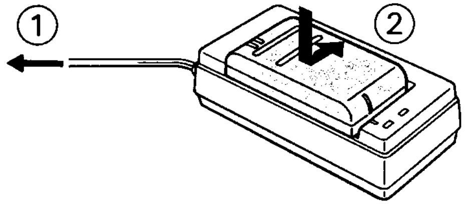
Notes

- If the power source is disconnected or the CHARGE button on the AC-V55 is pressed while the tape is being rewound, the DEW indication on the screen may flash and the tape may not run when you use the unit the next time.
  In this case, take out the cassette, then insert it again.
- To use the NP-22 or NP-22H battery pack, use the optional NPA-22 battery adaptor.
- ACC-GV8 video 8 accessory kit (optional) is available:
  — VCV-GV8 close-up viewer (1)
  — NP-55 battery pack (1)
  — LCS-GV8 video carrying case (1)

Using with Battery Pack — NP-55 or NP-77

1 First, charge the battery pack.

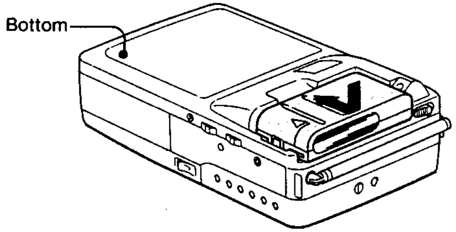
Use the supplied AC-V30 AC power adaptor.



① Connect the AC-V30 to a wall outlet.
② Install the battery pack.
Align the ▮▶ marks, then while pressing the battery pack slide the battery pack in the direction of the arrow.
The POWER lamp (green) and the CHARGE lamp (orange) on the AC-V30 will light up. The charging will begin.
When the charging is completed, the CHARGE lamp goes out.
Unplug the AC power adaptor and the POWER lamp will go out.

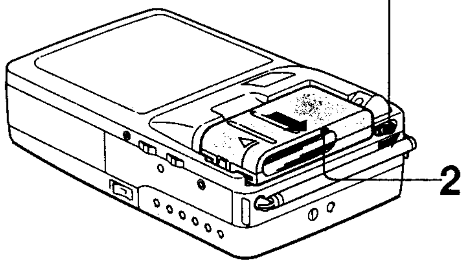
2 Attach the battery pack to the video TV recorder.

Align the metal part of the battery pack to the mounting surface of the unit, and slide the battery pack.



- The charging time is about 1 hour for an NP-55 battery pack, or about 2 hours for an NP-77.
- When you attach two battery packs to the AC-V55 AC power adaptor, first the charging of the battery 1 will be made, then the battery 2 will follow.
- The unit cannot be operated with the AC power adaptor when it is used for charging a battery pack, and the battery pack cannot be charged when the AC power adaptor is used to operate the unit.

To remove the battery pack



1 While sliding the BATT knob in the arrow direction,

2 Slide the battery pack as illustrated.

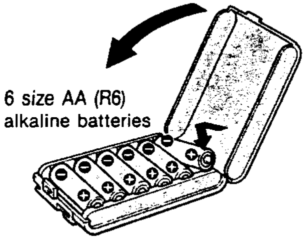
Battery life

A fully-charged NP-55 or NP-77 battery pack can operate this unit as follows:

	NP-55	NP-77
Watching TV programs	Approx. 60 min.	Approx. 120 min.
Playback of VTR	Approx. 45 min.	Approx. 90 min.
TV program recording	Approx. 40 min.	Approx. 80 min.
Camera recording*	Approx. 30 min.	Approx. 60 min.

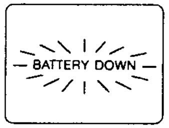
*When the optional CCD-G1E color video camera is connected.

Using with Battery Case — EBP-55



- Attach or remove the battery case to the unit in the same way as the battery pack.
- For playing back, continuous power for 35 minutes can be provided.

When the battery pack becomes weak



- The POWER lamp and the BATTERY DOWN display on the screen will flash then they will blink rapidly and the power will be turned off automatically.
  Replace the battery pack with the fully charged one.

- Use the battery pack until it is completely exhausted, then charge it fully. If you repeat charging when the battery pack is not exhausted, the battery may be damaged and the battery's life may be shortened.
- As the battery pack is consumed even when it is not used, make sure that you use the fully charged battery packs.
- If the unit is used in a cold place, its operating time is shortened.

- When the video TV recorder is not in use, remove the battery pack or the battery case. If the battery is installed, even if the POWER switch is set to OFF, a very small amount of electric current flows.

Battery life

- Replace the battery pack with a new one when the operating time of the completely charged battery pack has noticeably shortened.

The battery pack may be warm after charging, but this is normal.

Notes

- Make sure that the battery is fitted completely to the mounting surface, Imperfect fit may damage the projections on the video TV recorder.
- Keep the battery pack away from fire, as it may explode.
- Do not attempt to open the battery pack.
- Avoid any mechanical shock.
- Clean the battery pack terminals with a soft cloth when they become soiled.

Charging battery packs with other optional charger

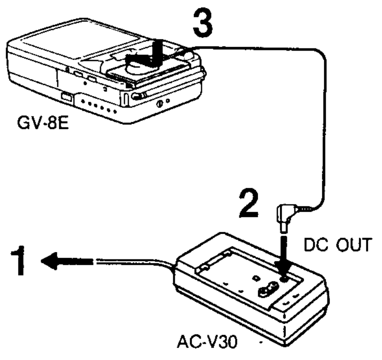
You can also use the AC-V55 AC power adaptor or BC-55 battery charger (not available in UK) to charge an NP-55 and/or an NP-77.
For details, see the instructions of the AC-V55 or BC-55.

Notes on battery case

- You cannot use normal batteries. Use only alkaline batteries.
- If you use the battery case in a cold place, its operating time is shortened.
- When you use the battery case to operate the video TV recorder, occasionally the displays on the screen may not blink.
- If you cannot remove the cassette from the unit, replace the batteries with new ones.

Using with AC Power Adaptor — AC-V30

1 Connect the AC power adaptor to a wall outlet.
2 Insert into the DC OUT jack.
3 Install the other side of the connecting cord to the video TV recorder.



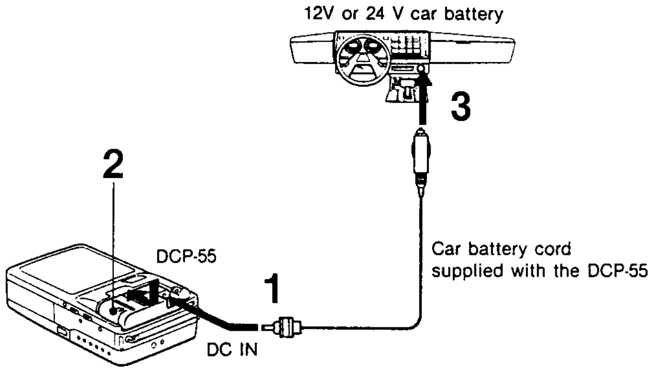
- The optional AC-V55 can also be used.
- Attach or remove the AC power adaptor in the same way as the battery pack.
- When disconnecting, do not pull the cord.

Charging temperature
The temperature range for charging is 5°C to 35°C (41°F to 95°F).
However, to provide maximum battery efficiency, the recommended temperature range when charging is 10°C to 30°C (50°F to 86°F).

- The unit is not disconnected from the AC power source as long as it is connected to the wall outlet.
- While the unit is in use, particularly during charging, keep it away from AM receivers and video equipment because it will disturb AM reception and video operation.

Using with Car Battery — DCP-55

1 Insert into the DC IN jack of the DC pack.
2 Attach to the video TV recorder.
3 Connect to the cigarette lighter socket.

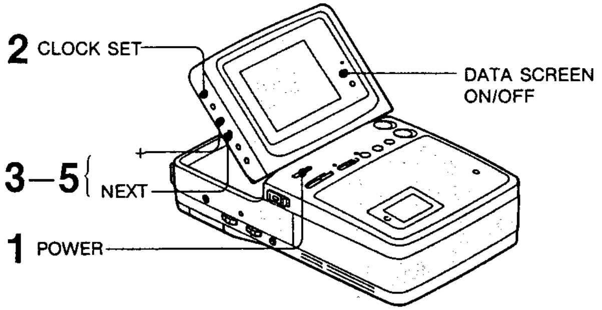


- The optional AC-V55 or the NP-4000 (battery pack) can also be used to operate this unit. In this case, connect them to the cigarette lighter socket of the car with the optional DCC-16AE car battery cord. The AC-V30 cannot be used in a car.
- Attach or remove the DC pack in the same way as the battery pack.

Notes
- Be careful not to let any metal object touch the metal part on the battery pack or the AC power adaptor. When the battery pack is not used, keep it in its case.
- Keep the video TV recorder away from the power source. If not, noise may appear on the screen.

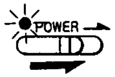
Notes on the use of the GV-8E in a car
- When you use the DCP-55 or AC-V55, connect them only to the cars with negative ground 12V or 24V car battery.
- For your safety, do not watch the TV or operate the controls while driving.
- Avoid leaving the unit in a place with very high temperature. If you do, it may cause distortion of the cabinet or malfunction of the unit.
- If you use this unit while your car is not in use, the car battery will be consumed.
  Avoid using this unit in such condition over 12 hours.

Setting the Clock

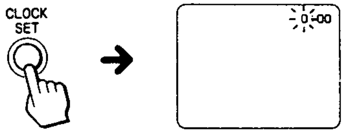


Example: Set to 13:15

1 Slide POWER to the right and release to turn the unit on.
The POWER lamp lights up.



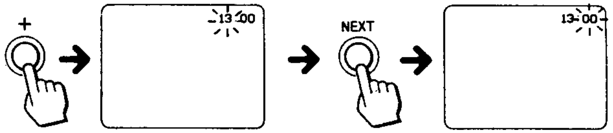
2 Press CLOCK SET.



The screen becomes dark.

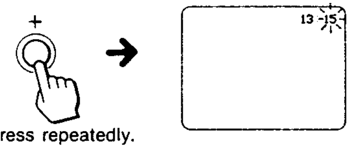
The next item to be set blinks.

3 Set the hour.
Press repeatedly until you get the correct setting.



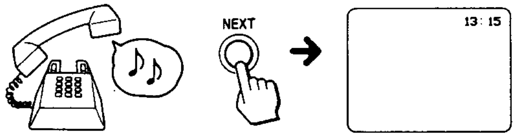
When you press and immediately release the + button, the indication will advance by one. If you keep the button pressed, the indication will advance continuously.

4 Set the minute.



Press repeatedly.

5 Press NEXT at the same time as an annouced time signal.



The screen goes back to the normal brightness.*

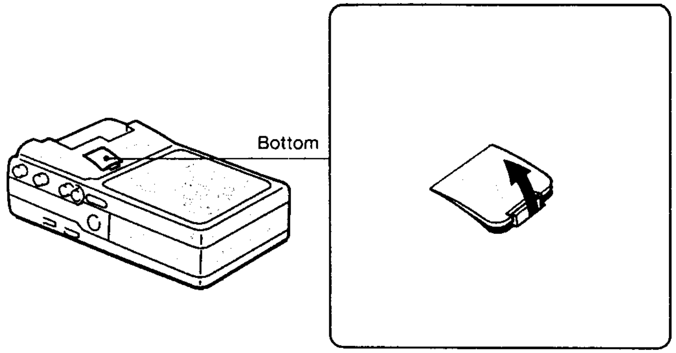
The clock starts.

* If the time indication was not displayed on the screen when you started setting the clock, the display goes off as the setting is completed. But, if the time indication was displayed, by pressing DATA SCREEN ON/OFF, when you started the setting, the display remains on the screen. To make the display disappear, press DATA SCREEN ON/OFF.

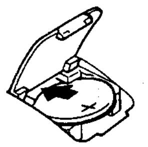
Inserting a Lithium Battery

This unit uses a lithium battery to activate the clock when the external power source is disconnected.

1 Open the cover of the lithium battery compartment.

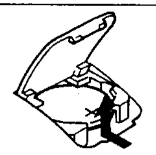


2 Install the supplied CR2032 lithium battery with the + side facing out.



3 Close the cover.

To remove the lithium battery
Press the side of the battery in the direction as indicated for installation and lift it.

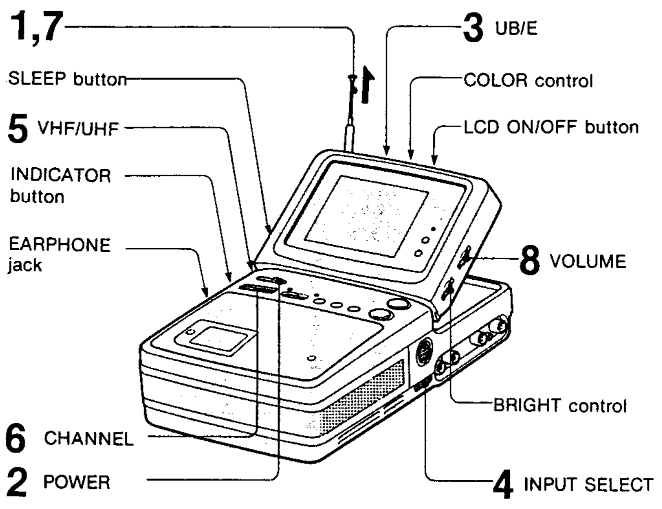


Lithium battery life
Approximately 1 year in normal operation.
If the lithium battery becomes weak, the time indication will blink on the screen for several seconds when the power is turned on. In this case, replace the battery with a Sony CR2032 lithium battery.
Use of a battery other than Sony CR2032 lithium battery may present a risk of fire or explosion.
After replacing the battery, the clock display becomes 0:00. Reset the clock.

Notes on lithium battery
- Keep the lithium battery out of the reach of children.
  Should the battery be swallowed, immediately consult a doctor.
- Wipe the battery with a dry cloth to assure a good contact.
- Be sure to observe the correct polarity when installing the battery.
- Do not hold the battery with metallic tweezers, otherwise a short-circuit may occur.
- Do not break up the battery nor throw it into a fire, which might cause it to explode. Carefully dispose of the used batteries.

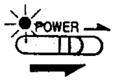
WARNING
Battery may explode if mistreated. Do not recharge, disassemble or dispose of in fire.

Watching TV Programs


1,7
SLEEP button
5 VHF/UHF
INDICATOR button
EARPHONE jack
6 CHANNEL
2 POWER
3 UB/E
COLOR control
LCD ON/OFF button
8 VOLUME
BRIGHT control
4 INPUT SELECT

1 Pull out the aerial fully.

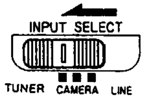
2 Turn the power on.



The POWER lamp lights up.

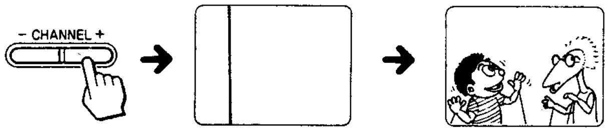
3 Set UB/E TV system selector.
UB for the United Kingdom.
E for other countries.

4 Set INPUT SELECT to TUNER.


INPUT SELECT
TUNER
CAMERA
LINE

5 Select VHF or UHF.
In the United Kingdom, only UHF is available.

6 Select the desired channel.

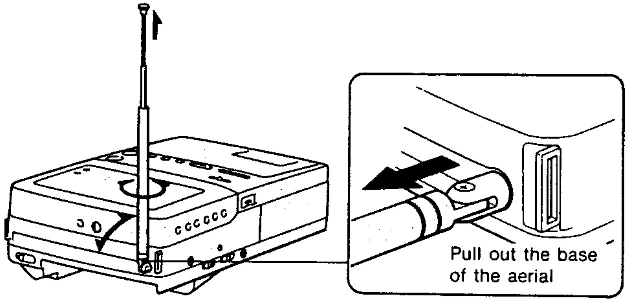


A vertical line (VHF: green, UHF: red) appears and moves while the unit is searching for the channel and stops at the next channel.

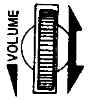
The vertical line disappears after several seconds.

Press + for higher-numbered channels and – for lower-numbered channels. The channels will appear in numerical sequence. Press CHANNEL +/– repeatedly until you get the desired channel on the screen.

7 Adjust the aerial for the best reception.


Pull out the base of the aerial

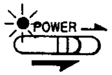
8 Adjust the volume.



To increase volume.

To decrease volume.

To turn off the TV

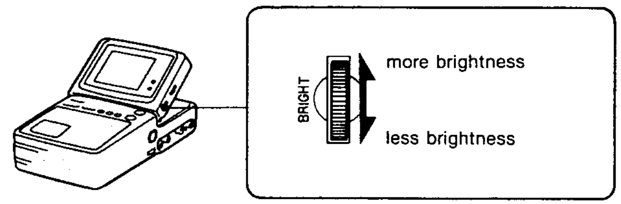


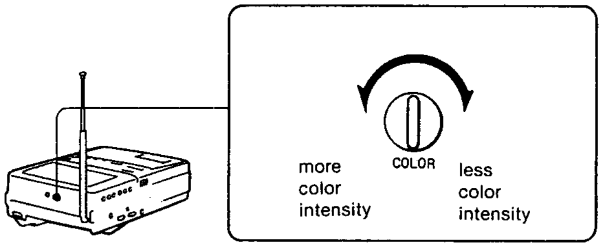
Slide POWER to the right and release. The lamp goes off.

To listen with headphones

Connect the supplied headphones to the EARPHONE jack.
The sound from the speaker will be cut off.
The supplied headphones are of stereo type, but the sound will be heard through both right and left sides in monaural.

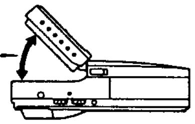
To adjust the picture





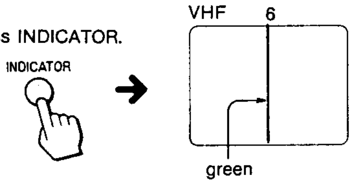
Adjust the above controls to your preference.

Adjust the angle of the LCD to your preference.



To know the channel you are watching

Press INDICATOR.



If the vertical line is green, you are watching a VHF channnel.
If it is in red, you are watching a UHF channel.

You know that you are watching VHF channel 6.

To mute the picture

Press LCD ON/OFF.

The picture will be muted.

It is recommended that you mute the picture when you view the playback picture of the VTR with another TV or monitor.
Battery life will be longer if you use the unit with the picture turned off.

"Last channel" memory function

- While you are watching the TV, if the power source is disconnected or the battery pack becomes exhausted, the unit turns off with the last channel being memorized.
  When you turn on the unit again, the last channel will appear on the screen.
- The same thing occurs when the TV signal is cut off, for example when you go through a tunnel.

Switching the TV system selector

As the voice band in the United Kingdom is different from those on the Continent, set the TV system selector to UB.
Otherwise you will receive pictures without sound.

Note

When no picture is displayed, if the sound is set to a low volume, or the headphones are connected, the unit seems to be turned off though it is not.
Be sure to turn off the POWER when the unit is not used.

To have the unit turned off automatically — SLEEP timer

You can set the unit to turn off automatically after a certain time between 30 minutes and 5 hours while viewing a TV program or video playback , or while recording.

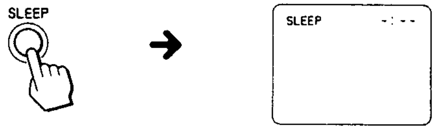
Each time you press the SLEEP button, the display changes as follows:

```
-:--  →  30  →  1:00  →  1:30  →  2:00
 ↑                                  ↓
5:00                               2:30
 ↑                                  ↓
4:30  ←  4:00  ←  3:30  ←          3:00
```

Example: To turn the TV off after 2 hours

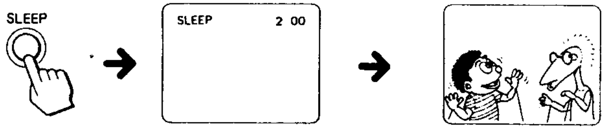
1 Make sure the clock is set correctly (page 16).

2 Press SLEEP while watching the TV, etc.



The screen becomes dark.

3 Select the desired time interval by pressing SLEEP.



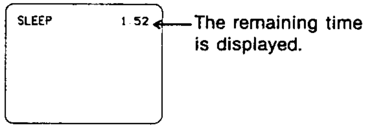
The screen goes back to the normal brightness after several seconds.

The TV will be turned off automaticaly after 2 hours.

The operation will be the same for the tape playback and recording.
The tape will stop running after the selected time interval.

To check the remaining time

Press SLEEP once.

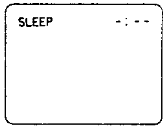


Note

When you use the unit with rechargeable batteries, the unit may be turned off before the selected time because the batteries are exhausted.

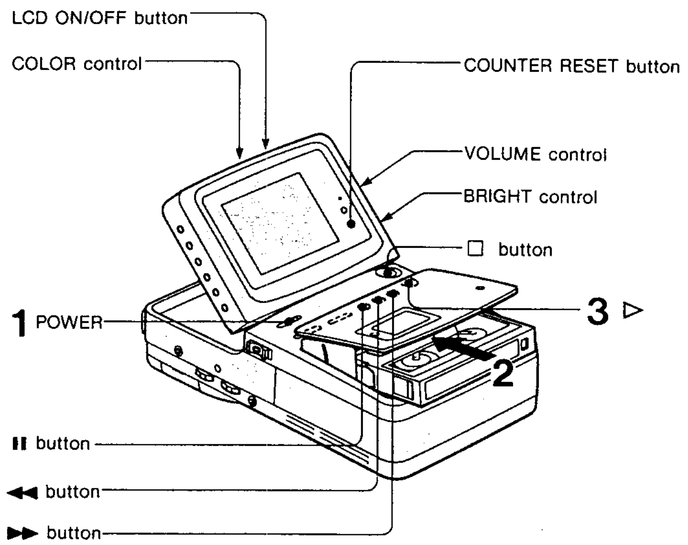
To stop the SLEEP timer

Press SLEEP repeatedly until you have the "-:--" display.

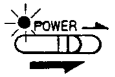


You can also stop the SLEEP timer by turning the unit off with the POWER switch.

Playing Back the Recorded Tapes

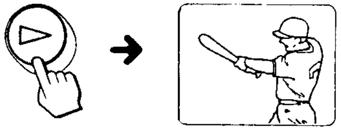

LCD ON/OFF button
COLOR control
COUNTER RESET button
VOLUME control
BRIGHT control
☐ button
3 ▷
1 POWER
2
II button
◀◀ button
▶▶ button

1 Turn the power on.
The lamp lights up.

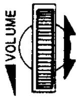


2 Insert a recorded tape.

3 Press ▷ to start playback.



4 Adjust the volume.



To mute the picture

Press LCD ON/OFF.

To adjust the picture

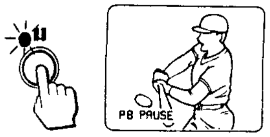
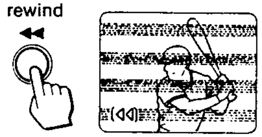
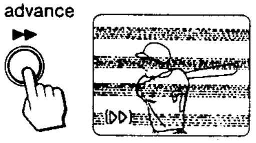
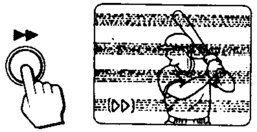
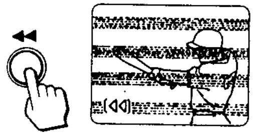
Adjust the BRIGHT and COLOR controls (page 22).

To stop the playback at the desired time

Use the SLEEP function.
You can have the unit turned off at the preset time. See page 24.

		On-screen display
To stop playback	Press ☐ .	—
To rewind the tape and play it back automatically — Auto play	Keep ◀◀ pressed and press ▷.	AUTO PLAY
When the tape is played to the end	The tape stops. The unit is not turned off.	—
To advance the tape rapidly	Press ▶▶.	▷▷
To rewind the tape	Press ◀◀.	◁◁

Various playback modes

During playback	To stop the tape for a moment — *Still picture*	 The lamp lights up.	To resume normal playback, press **II** again, or press ▷. The pause mode will be automatically released after about 5 minutes and playback will resume.
	To locate a particular point while viewing the picture — Picture search	To rewind ◀◀  To advance ▶▶ 	When you release the button, the unit will return to the previous mode.
When the unit is in the fast forward mode,	To view the picture at high speed — FR picture search	▶▶ 	
When the tape is being rewound,		◀◀ 	

Notes

- In the still picture, picture search or picture at high speed, streaks will appear and the sound will be muted.
- Picture noise will increase when you play back a tape recorded in the LP mode.
- If you make the picture search or the FR picture search with another TV or monitor, the picture may be in black and white, or the picture may shake vertically.
  During picture search or FR picture search, streaks will be larger than those that appear in the pictures viewed on this unit.

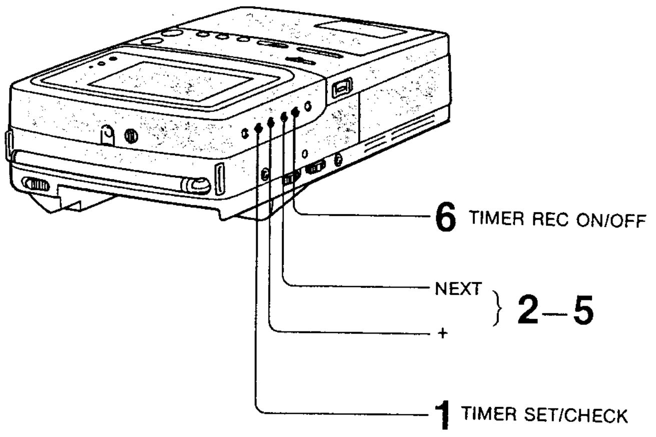
To Start Recording at the Desired Time

A TV program within 24 hours can be preset to be recorded automatically.

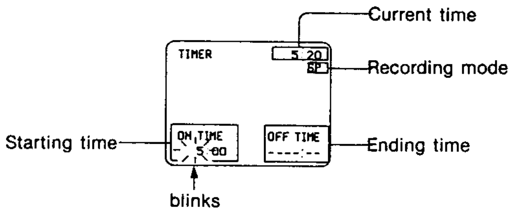
Before setting the timer

- Make sure that the power is supplied: is the battery pack fully charged? (For long recording, using the AC power source is recommended.)
- Set the clock. (Page 16)
- Insert a cassette. Make sure that the safety tab is slid in.
- Select the recording mode, SP or LP.
- Set the INPUT SELECT switch to the appropriate position. To record TV programs, set to TUNER.
- Select the desired channel for TV program recording.
  For better recording of picture and sound, using an external aerial is recommended. See page 41.

To set the timer

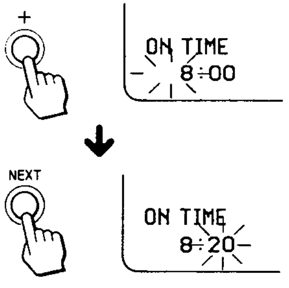

6 TIMER REC ON/OFF
NEXT
+
} 2–5
1 TIMER SET/CHECK

1 **Press TIMER SET/CHECK.**
The screen becomes dark


TIMER
5 20
SP
ON TIME
5:00
OFF TIME
--:--
Current time
Recording mode
Starting time
Ending time
blinks

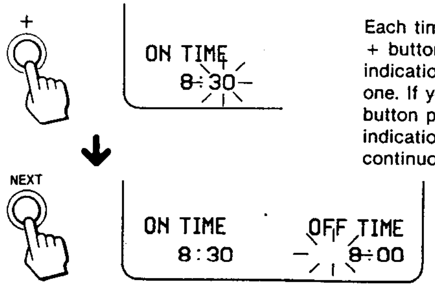
Setting the starting time

2 **Set the hour.**


+
NEXT
ON TIME
8:00
ON TIME
8:20

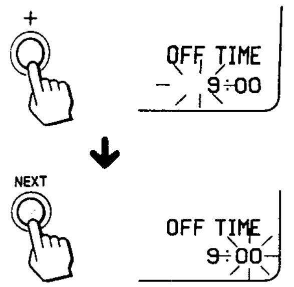
Each time you press the + button, the hour indication increases by one.
If you keep the button pressed, the indication will increase continuously.

3 **Set the minute.**

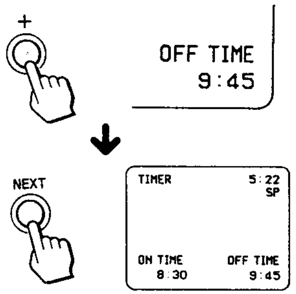

+
NEXT
ON TIME
8:30
ON TIME
8:30
OFF TIME
8:00

Each time you press the + button, the minute indication increases by one. If you keep the button pressed, the indication will increase continuously.

4 Set the hour.

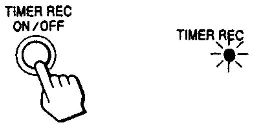


5 Set the minute.



The screen will go back to the previous state in a few seconds.

6 Press TIMER REC ON/OFF.



The power will be turned off.
The TIMER REC lamp lights up.

Recording starts at the preset time and the power is turned off when it ends.
If the safety tab on the cassette is slid out or if no cassette is inserted when you press the TIMER REC ON/OFF button, "CASSETTE" indication will appear.

Note

Be sure to press the TIMER REC ON/OFF button only after you have finished the timer settings. If you press it while presetting, the power turns off at this point and the preset program is erased.

During timer recording, both picture and sound will be muted. To listen to the sound and watch the picture, press LCD ON/OFF.
When the TIMER REC lamp is lit, any buttons except for the TIMER REC ON/OFF button and the TIMER SET/CHECK button do not function.

To stop the timer recording

Press TIMER REC ON/OFF again.

If a power interruption occurs when the unit is connected to the AC power source

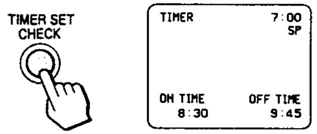
Recording will stop. The power will not be turned on even when the interruption ends.

To set the timer while the tape is running

You can set the timer during playback or recording.
In this case, advance or rewind the tape to the desired position before pressing the TIMER REC ON/OFF button in step 6.

To check the setting

Press TIMER SET/CHECK while the TIMER REC lamp is lit.
The power is turned on and the turn-on and turn-off times will be displayed.



If you have made a mistake in timer setting

Press TIMER REC ON/OFF to cancel the timer recording, then turn the unit on and set the timer again.

If the turn-on and turn-off times are the same

You can record to the end of the tape.
If the tape ends before the turn-off time, recording will stop and the power will be turned off.

Notes

- The timer recording cannot be made on AC power when the AC power adaptor is used for charging a battery pack. Before setting the timer, finish charging the battery pack which will be used later.
- When using the unit with the optional AC-V55 AC power adaptor, timer recording can be made after charging has been completed (see fig. 1). However, if the charging time overlaps the time set for timer recording, the timer recording will not start (see fig. 2). Set the timer so that charging will finish before the timer recording ON TIME.

Fig.1

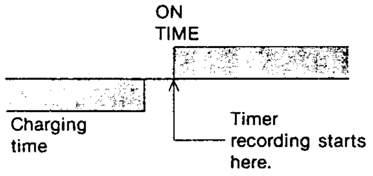
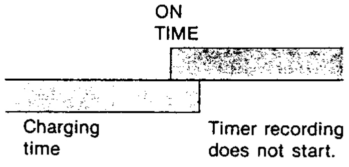
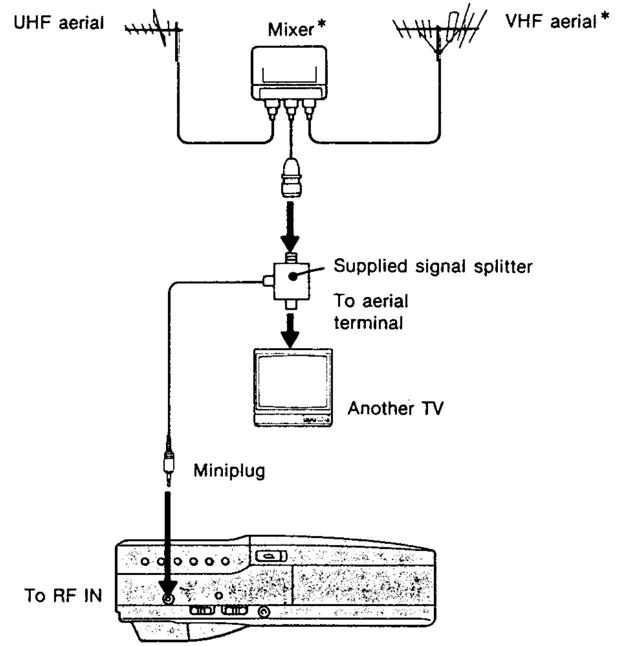

ON
TIME
Charging
time
Timer
recording starts
here.

Fig.2


ON
TIME
Charging
time
Timer recording
does not start.

Connecting an Outdoor Aerial

If you cannot obtain satisfactory reception when recording TV programs, use an outdoor aerial.


UHF aerial
Mixer*
VHF aerial*
Supplied signal splitter
To aerial
terminal
Another TV
Miniplug
To RF IN

*The mixer and the VHF aerial are not necessary in the United Kingdom as only UHF is available.

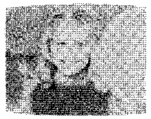
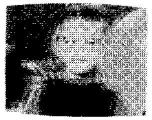
Notes

- Use the RF IN jack only for TV program recording.
- Before connecting the aerials, turn off the unit.
- Make connections firmly. A loose connection may cause a distorted picture.
- When using the unit in a car, use a commercially available car aerial, etc. For details, refer to the instruction manual of the car aerial.

Troubleshooting

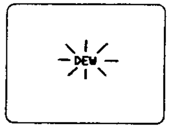
If you think you have a problem, double-check before calling the serviceman.
You may have overlooked something relatively simple!

	Symptom	Possible causes and corrections
POWER	The unit is not operable even if the POWER switch is turned on.	• No battery pack is attached. • The battery pack is exhausted. → Charge it. (page 10) • AC power adaptor or car battery cord is disconnected.
	Power turns off automatically during operation.	• The battery pack is exhausted. • The SLEEP timer has been set.
	The battery pack is quickly discharged.	• The ambient temperature is too low. • The battery pack has not been charged fully.
CLOCK	The clock blinks showing "0:00".	If the lithium battery has been changed, reset the clock (page 16), and if necessary, reset the timer recording.
RECORDING AND PLAYBACK	The playback picture is not clear.	• The video heads may be contaminated. Clean the heads using the Sony V8-25CL cleaning cassette (optional). For details on cleaning, refer to the instructions furnished with the cleaning cassette. • The video heads may be damaged.
	During recording, the picture is not clear.	TV signal is too weak. Adjust the telescopic aerial or connect an external aerial.
	Recording cannot be made.	• The safety tab on the cassette is slid out. • Moisture condensation has occured.
	The tape does not run even if the tape transport button is pressed.	• Timer setting has been made. Press the TIMER REC ON/OFF button and turn on the unit again. • Moisture condensation has occured.
	The camera recording cannot be made.	The camera is not connected correctly.
	The cassette cannot be ejected.	• No power is supplied to the unit. • The battery pack is exhausted. Use the charged battery. (page 10)

	Symptom	Possible causes and corrections
TV	Picture is muted.	LCD ON/OFF button has been pressed. Press it again.
	Both picture and sound are muted.	The unit is in the timer recording mode. Press LCD ON/OFF.
	Picture appears but no sound	• Adjust the VOLUME control. • Disconnect the headphones.
	No color	Adjust COLOR. (page 22)
	Snow and noise appear. 	Check the external aerial.
	Dotted lines or stripes 	This is often caused by local interference. (e.g. cars, neon signs, hair dryers, etc) Adjust aerial for minimum interference.
	Double images or ghosts 	Reflections from nearby mountains or buildings often cause this problem. Adjust the telescopic aerial or change the position of the unit for better reception.
TIMER RECORDING	The timer setting display does not appear.	Set the clock (page 16).
	A timer recording has not been made.	• The safety tab on the cassette was slid out. • The tape was not long enough. • The TIMER REC ON/OFF button has not been pressed. • The clock was not set correctly. • The battery pack was exhausted. • There has been a power interruption (for AC operation). • Moisture condensation has occured.

Notes on Moisture Condensation

If the unit is brought directly from a cold to a warm location, moisture may condense inside the unit. In this condition, the tape may adhere to the head drum and be damaged or the unit may not operate correctly. To prevent possible damage under these circumstances, the unit is furnished with moisture sensors.



If moisture is present inside the unit, the DEW Indication flashes on the screen when you press a tape transport button.
Only the EJECT button functions at this time.

↓

Eject the cassette and turn off the unit and leave it with the cassette holder open at least for one hour.

↓

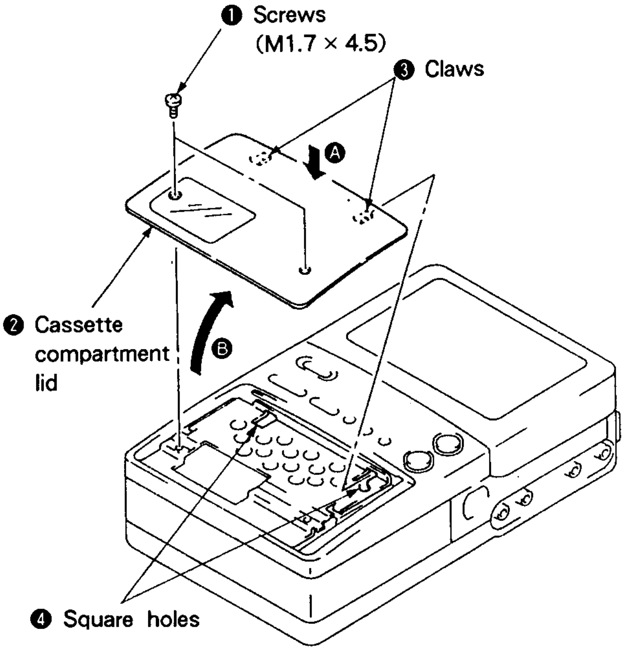
The unit can be used again if the DEW indication does not appear when a tape transport button is pressed.

SECTION 2
DISASSEMBLY

2-1. REMOVAL OF CASSETTE COMPARTMENT LID

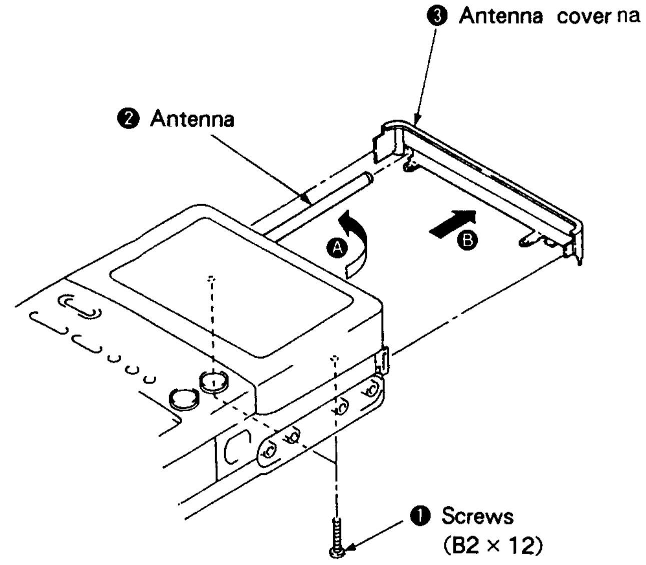
1) Remove two screws ❶.
2) Press the Ⓐ section lightly, and remove the cassette compartment lid ❷ by opening in the direction of arrow Ⓑ.

Note : Put in two claws ❸ into two square holes ❹ before installing.


❶ Screws
(M1.7 × 4.5)
❸ Claws
Ⓐ
❷ Cassette compartment lid
Ⓑ
❹ Square holes

2-2. REMOVAL OF ANTENNA COVER

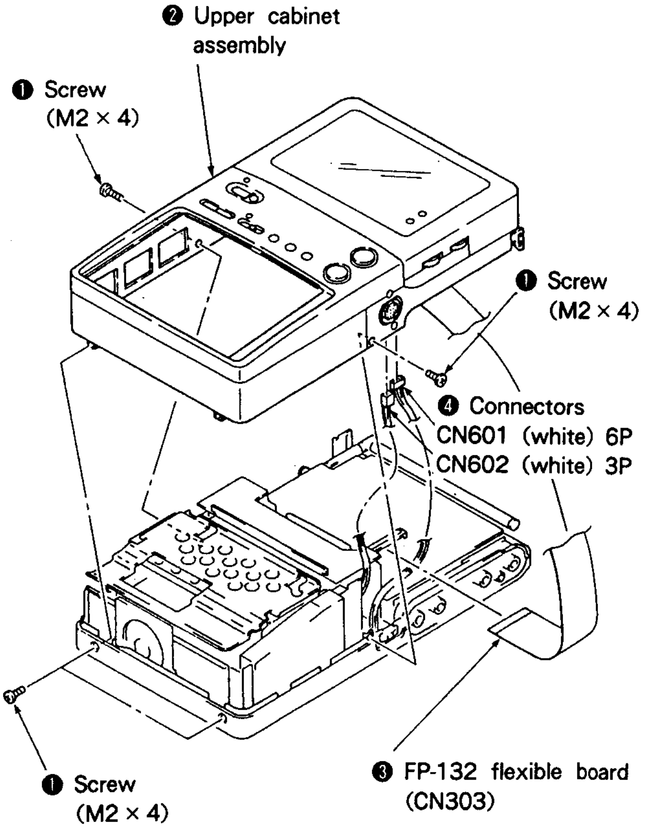
1) Remove two screws ❶.
2) Raise the antenna ❷ in the direction of arrow Ⓐ.
3) Remove the antenna cover ❸ in the direction of arrow Ⓑ, and pull out from the antenna ❷.


❸ Antenna cover na
❷ Antenna
Ⓐ
Ⓑ
❶ Screws
(B2 × 12)

2-3. REMOVAL OF UPPER CABINET ASSEMBLY

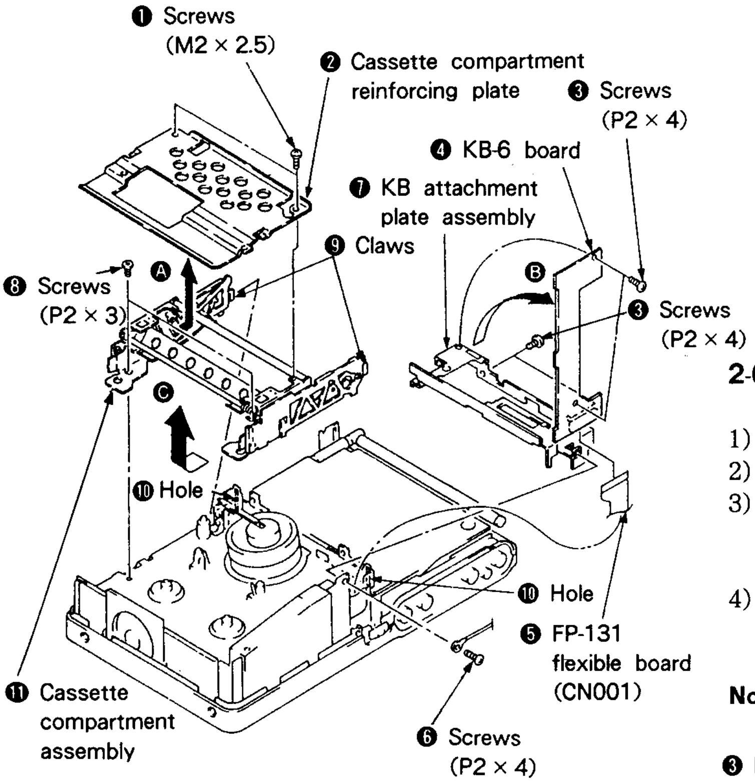
1) Remove four screws ❶.
2) Remove the upper cabinet assembly ❷.
3) Remove the FP-132 flexible board (CN303) ❸.
4) Remove two connectors (CN601, CN602) ❹.

Note : When removing the upper cabinet assembly ❷, be careful not to break the FP-132 flexible board (CN303) ❸.


❷ Upper cabinet assembly
❶ Screw
(M2 × 4)
❶ Screw
(M2 × 4)
❹ Connectors
CN601 (white) 6P
CN602 (white) 3P
❶ Screw
(M2 × 4)
❸ FP-132 flexible board
(CN303)

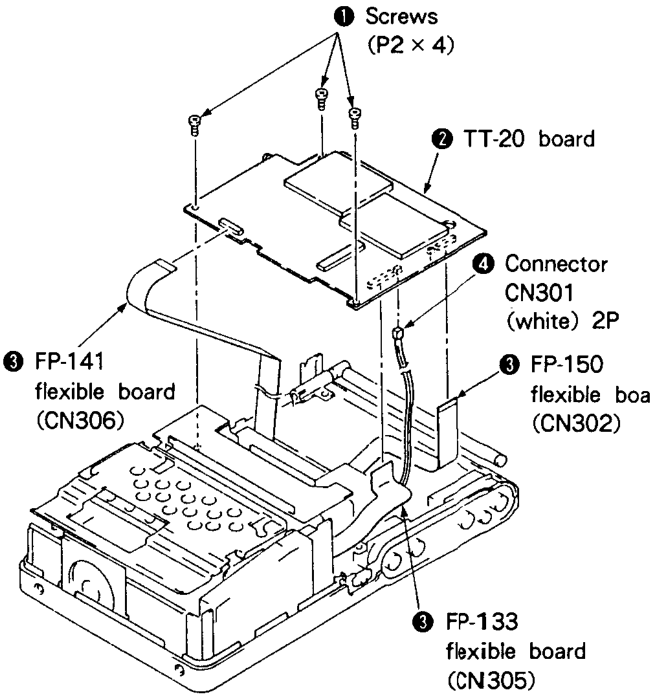
2-4. REMOVAL OF CASSETTE COMPARTMENT ASSEMBLY

1) Remove two screws ❶, and remove the cassette compartment reinforcing plate ❷, in the direction of arrow Ⓐ.
2) Remove two screws ❸, and remove the portion of the KB-6 board ❹ from the KB attachment plate assembly ❼.
3) Remove the KB-6 board ❹ in the direction of arrow Ⓑ.
4) Remove the FP-131 flexible board (CN001) ❺.
5) Remove three screws ❻, and remove the KB attachment plate assembly ❼.
6) Remove two screws ❽, and remove two claws ❾ from two holes ❿.
7) Remove the cassette compartment assembly ⓫ in the direction of arrow Ⓒ.


❶ Screws (M2 × 2.5)
❷ Cassette compartment reinforcing plate
❸ Screws (P2 × 4)
❹ KB-6 board
❼ KB attachment plate assembly
❾ Claws
❽ Screws (P2 × 3)
Ⓐ
Ⓑ
Ⓒ
❸ Screws (P2 × 4)
❿ Hole
❿ Hole
❺ FP-131 flexible board (CN001)
⓫ Cassette compartment assembly
❻ Screws (P2 × 4)

2-5. REMOVAL OF TT-20 BOARD

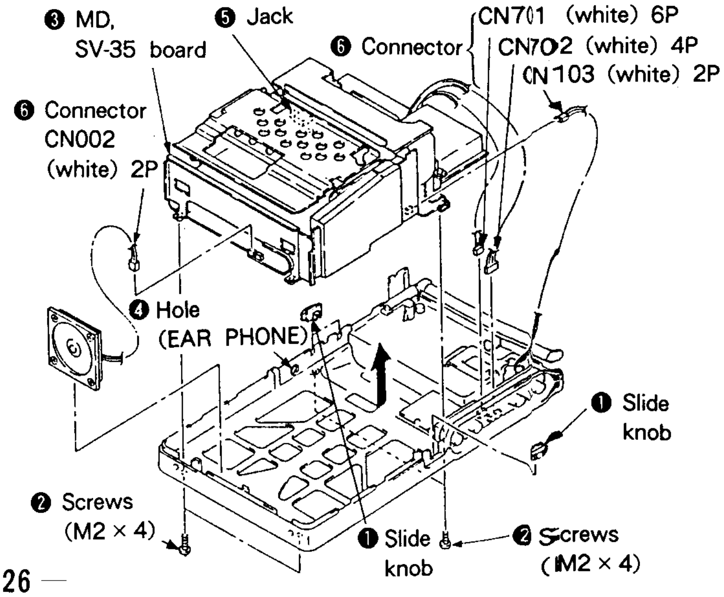
1) Remove three screws ❶, and remove the TT-20 board ❷.
2) Remove three FP-133, FP-141, FP-150 flexible boards (CN305, CN306 and CN302) ❸.
3) Remove the connector (CN301) ❹.


❶ Screws (P2 × 4)
❷ TT-20 board
❹ Connector CN301 (white) 2P
❸ FP-141 flexible board (CN306)
❸ FP-150 flexible boa (CN302)
❸ FP-133 flexible board (CN305)

2-6. REMOVAL OF MD, SV-35 BOARD

1) Remove three slide knobs ❶.
2) Remove four screws ❷.
3) Remove the MD, SV-35 board ❸ in the direction of arrow, and remove the jack ❺ from the hole (EAR PHONE) ❹.
4) Remove four connectors (CN701, CN702, CN103 and CN002) ❻.

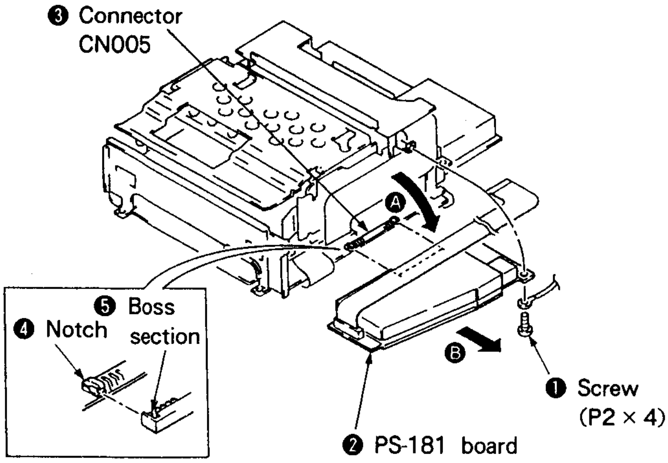
Note : When installing, put the jack ❺ into the hole (EAR PHONE) ❹ before installing.


❸ MD, SV-35 board
❺ Jack
❻ Connector
CN701 (white) 6P
CN702 (white) 4P
CN103 (white) 2P
❻ Connector CN002 (white) 2P
❹ Hole (EAR PHONE)
❶ Slide knob
❷ Screws (M2 × 4)
❶ Slide knob
❷ Screws (M2 × 4)

2-7. REMOVAL OF PS-181 BOARD

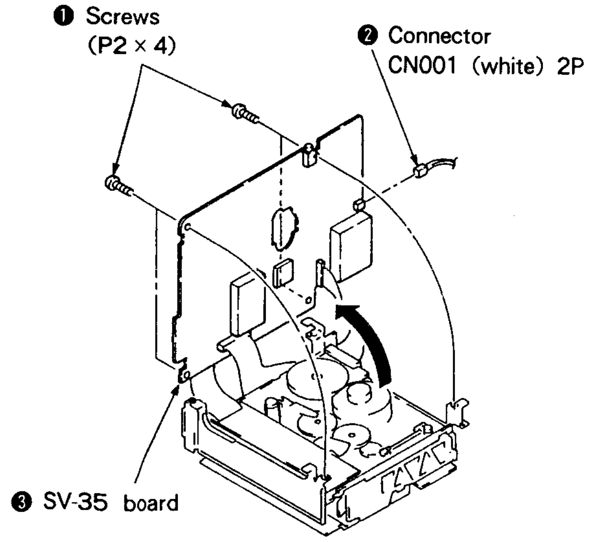
1) Remove the screw ❶.
2) Open the PS-181 board ❷ in the direction of arrow Ⓐ.
3) Remove the PS-181 board ❷ from the connector (CN005) ❸ with pulling the board in the direction of arrow Ⓑ.

Note : When installing, install the PS-181 board ❷ on the main unit with inserting its two boss section ❺ into as many notching section ❹ of the connector (CN005) ❸, and raise the PS-181 board ❷.


❸ Connector
CN005
Ⓐ
❺ Boss section
❹ Notch
Ⓑ
❶ Screw
(P2 × 4)
❷ PS-181 board

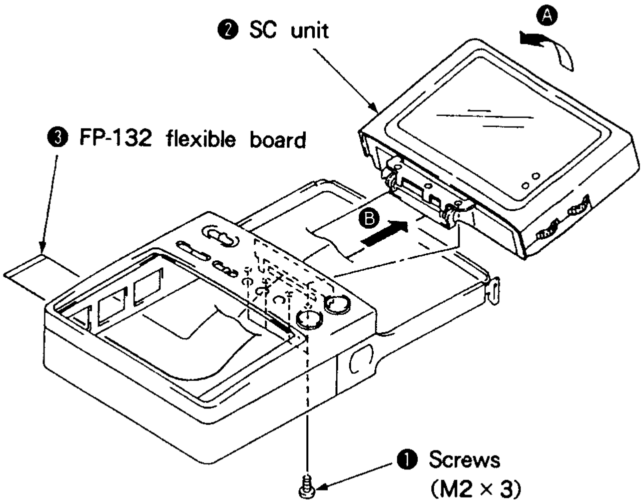
2-8. OPENING OF SV-35 BOARD

1) Remove four screws ❶.
2) Remove the connector (CN001) ❷.
3) Open the SV-35 board ❸ in the direction of arrow.


❶ Screws
(P2 × 4)
❷ Connector
CN001 (white) 2P
❸ SV-35 board

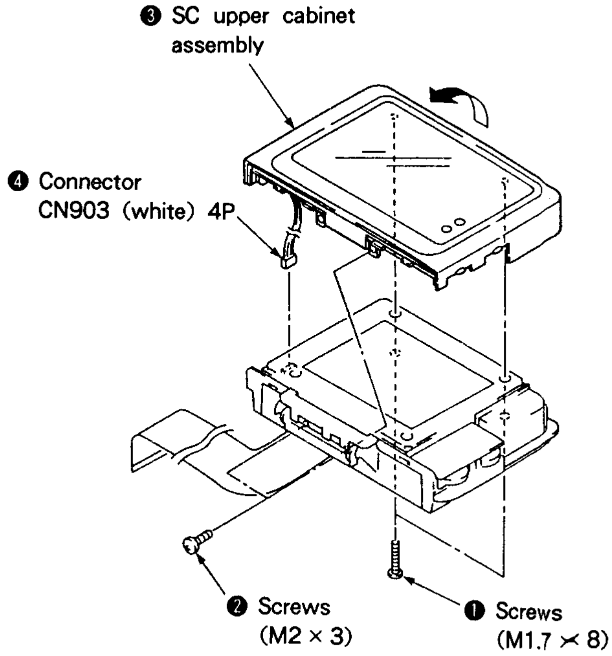
2-9. REMOVAL OF SC UNIT

1) Remove four screws ❶.
2) Raise the SC unit ❷ in the direction of arrow Ⓐ.
3) Remove the SC unit ❷ in the direction of arrow Ⓑ with care for the FP-132 flexible board ❸.


❷ SC unit
Ⓐ
❸ FP-132 flexible board
Ⓑ
❶ Screws
(M2 × 3)

2-10. REMOVAL OF SC UPPER CABINET ASSEMBLY

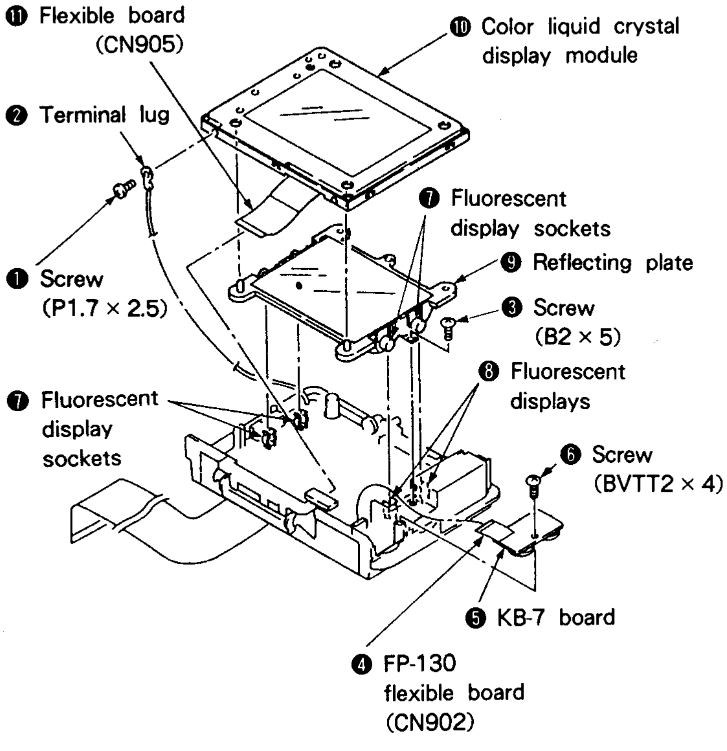
1) Remove two screws ❶.
2) Remove two screws ❷.
3) Remove the SC upper cabinet assembly ❸ in the direction of arrow.
4) Remove the connector (CN903) ❹.


❸ SC upper cabinet
assembly
❹ Connector
CN903 (white) 4P
❷ Screws
(M2 × 3)
❶ Screws
(M1.7 × 8)

2-11. REMOVAL OF COLOR LIQUID CRYSTAL DISPLAY MODULE AND REFLECTING PLATE

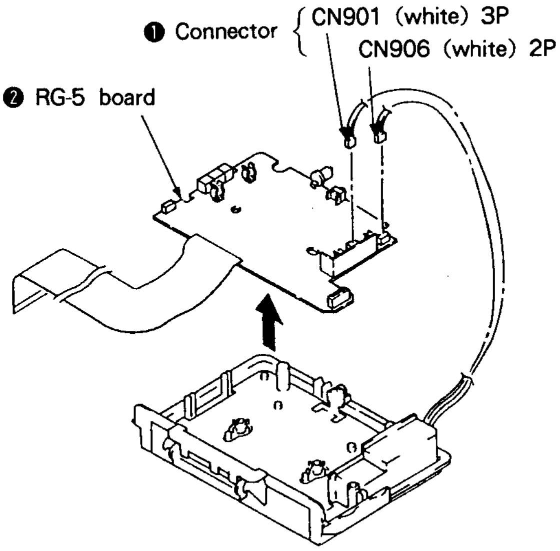
1) Remove the screw ❶, and remove the terminal lug ❷.
2) Remove the screw ❸.
3) Remove the FP-130 flexible board (CN902) ❹, and remove the KB-7 board ❺.
4) Remove the screw ❻.
5) Remove the fluorescent displays ❽ from four fluorescent display sockets ❼, and remove the reflecting plate ❾.
6) Remove the flexible board (CN905) ⓫, and remove the color liquid crystal display module ❿.

Note : When installing, install the flexible board (CN905) ⓫ before installing the reflecting plate ❾.


⓫ Flexible board (CN905)
❿ Color liquid crystal display module
❷ Terminal lug
❼ Fluorescent display sockets
❾ Reflecting plate
❶ Screw (P1.7 × 2.5)
❸ Screw (B2 × 5)
❽ Fluorescent displays
❼ Fluorescent display sockets
❻ Screw (BVTT2 × 4)
❺ KB-7 board
❹ FP-130 flexible board (CN902)

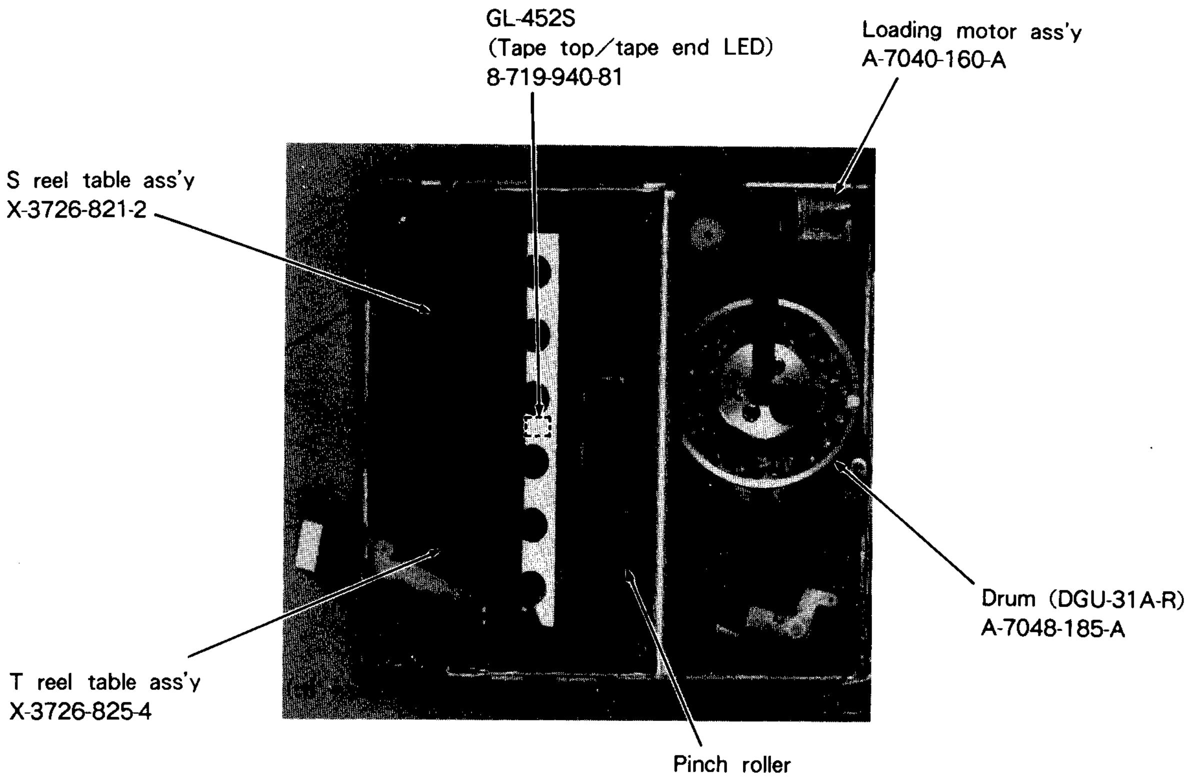
2-12. REMOVAL OF RG-5 BOARD

1) Pull out two connectors (CN901 and CN906) ❶.
2) Remove the RG-5 board ❷ in the direction of arrow.

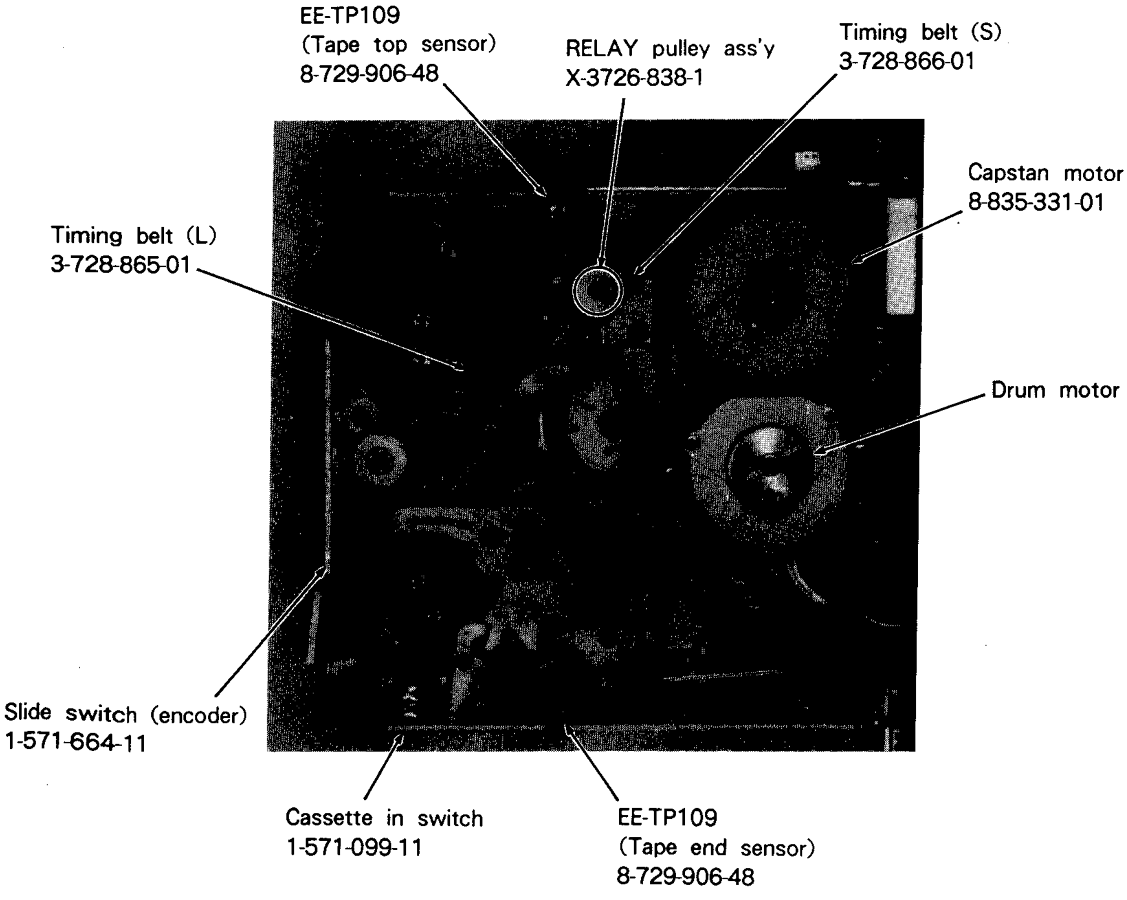

❶ Connector { CN901 (white) 3P
CN906 (white) 2P
❷ RG-5 board

2-13. INTERNAL VIEW

— Top side —

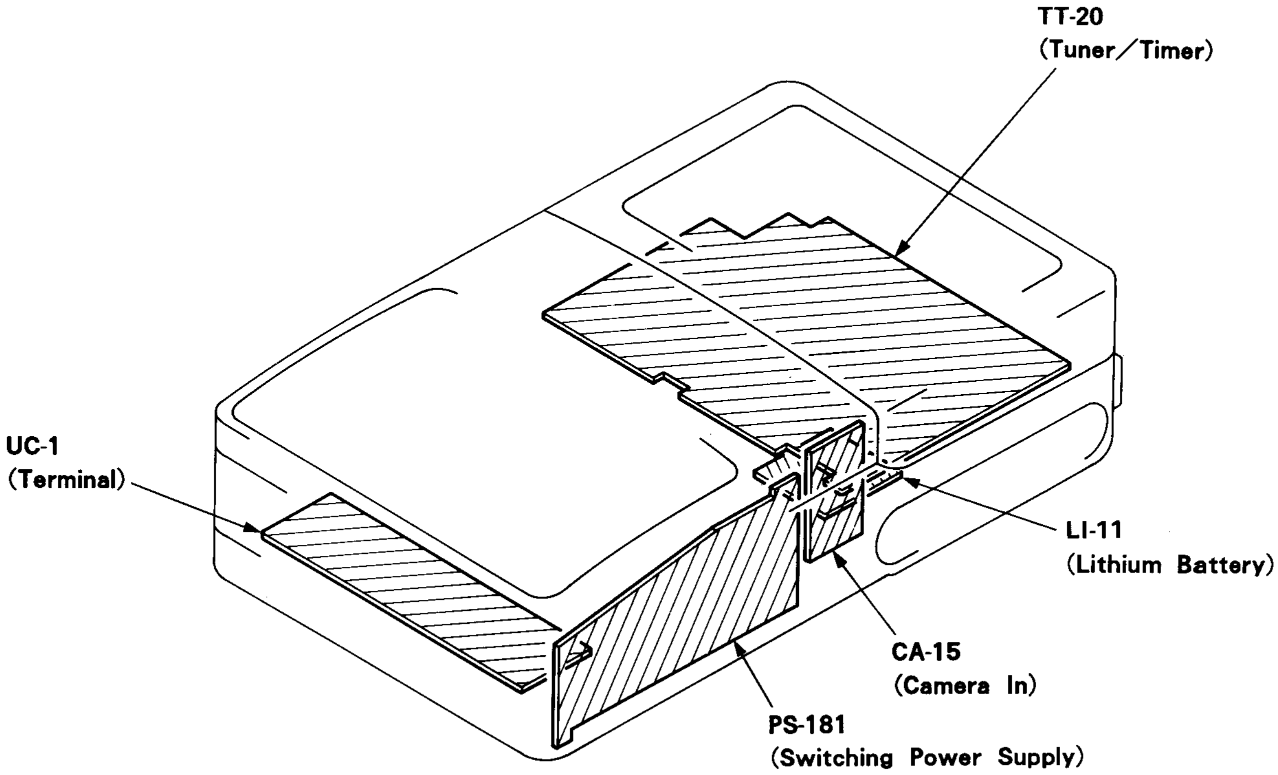

GL-452S
(Tape top/tape end LED)
8-719-940-81
Loading motor ass'y
A-7040-160-A
S reel table ass'y
X-3726-821-2
Drum (DGU-31A-R)
A-7048-185-A
T reel table ass'y
X-3726-825-4
Pinch roller

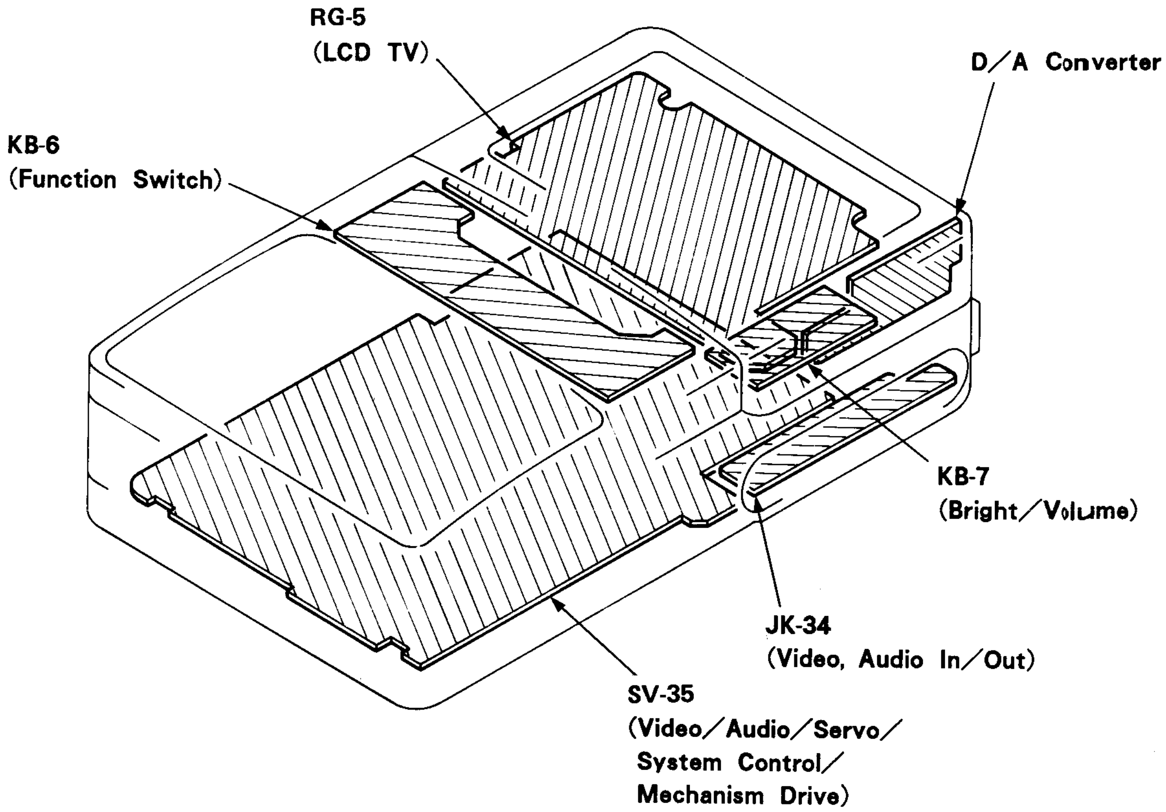
— Bottom side —


EE-TP109
(Tape top sensor)
8-729-906-48
RELAY pulley ass'y
X-3726-838-1
Timing belt (S)
3-728-866-01
Capstan motor
8-835-331-01
Timing belt (L)
3-728-865-01
Drum motor
Slide switch (encoder)
1-571-664-11
Cassette in switch
1-571-099-11
EE-TP109
(Tape end sensor)
8-729-906-48

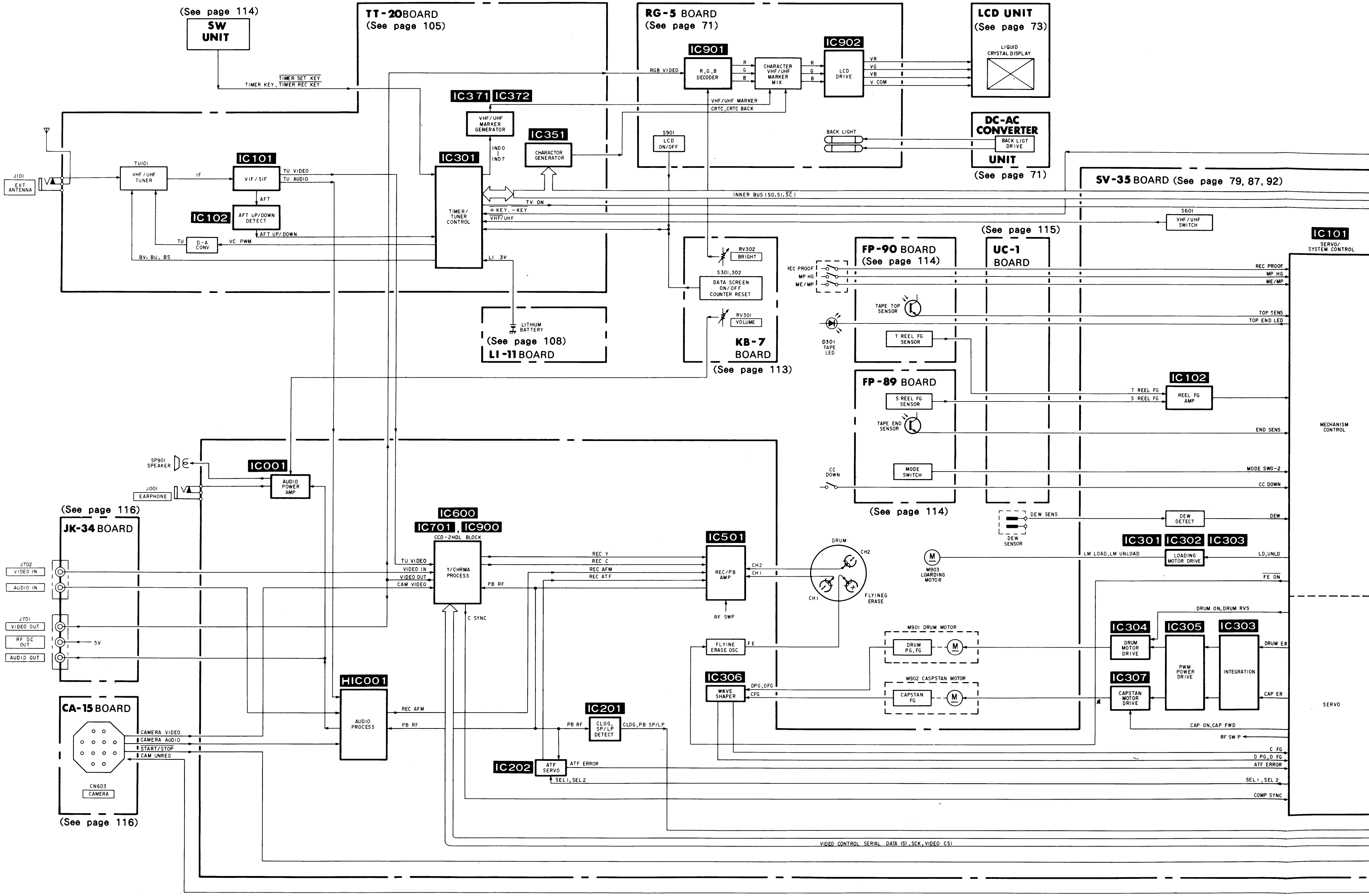
SECTION 3
DIAGRAMS

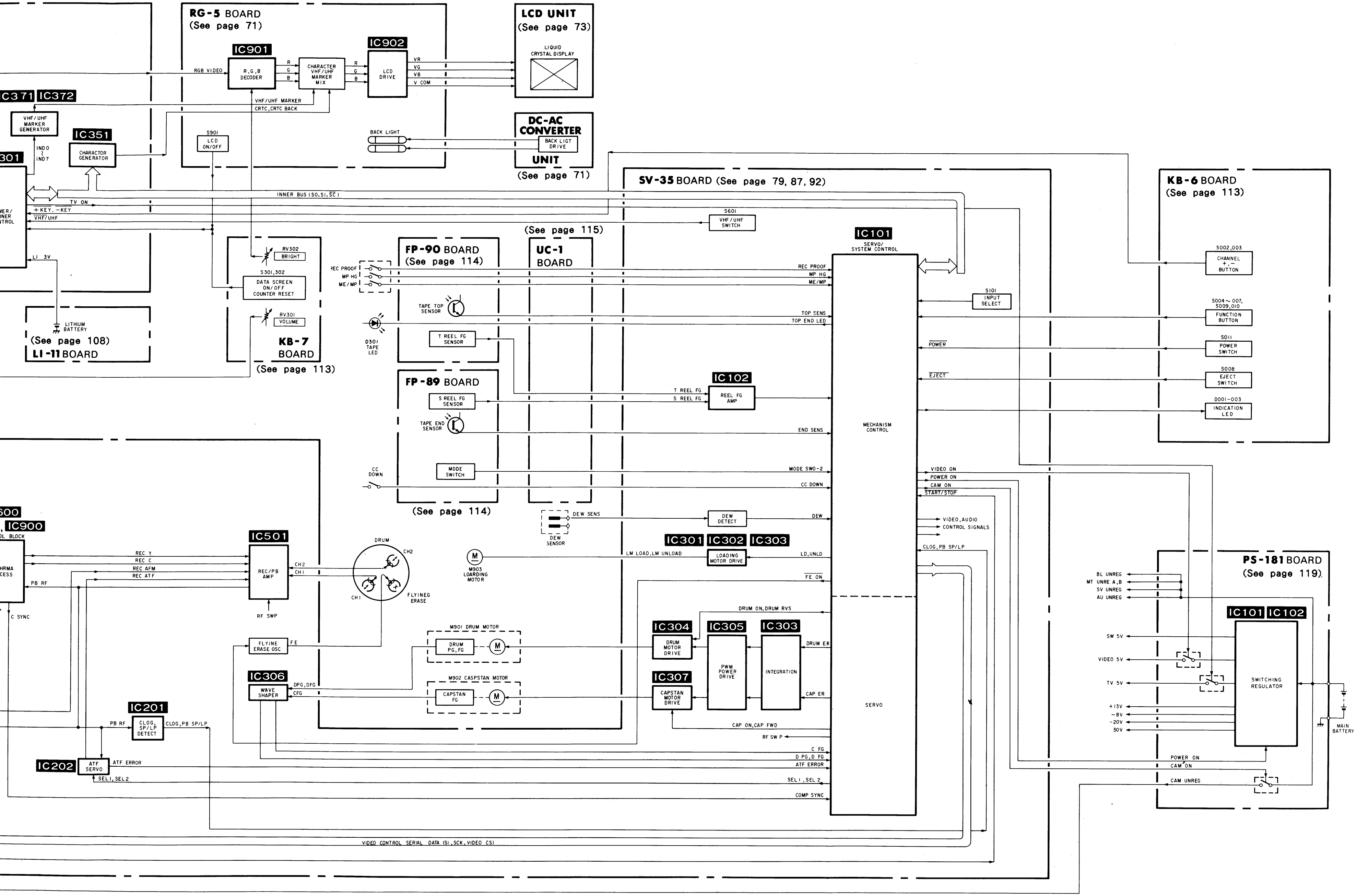
3-1. CIRCUIT BOARDS LOCATION


TT-20
(Tuner/Timer)
UC-1
(Terminal)
LI-11
(Lithium Battery)
CA-15
(Camera In)
PS-181
(Switching Power Supply)

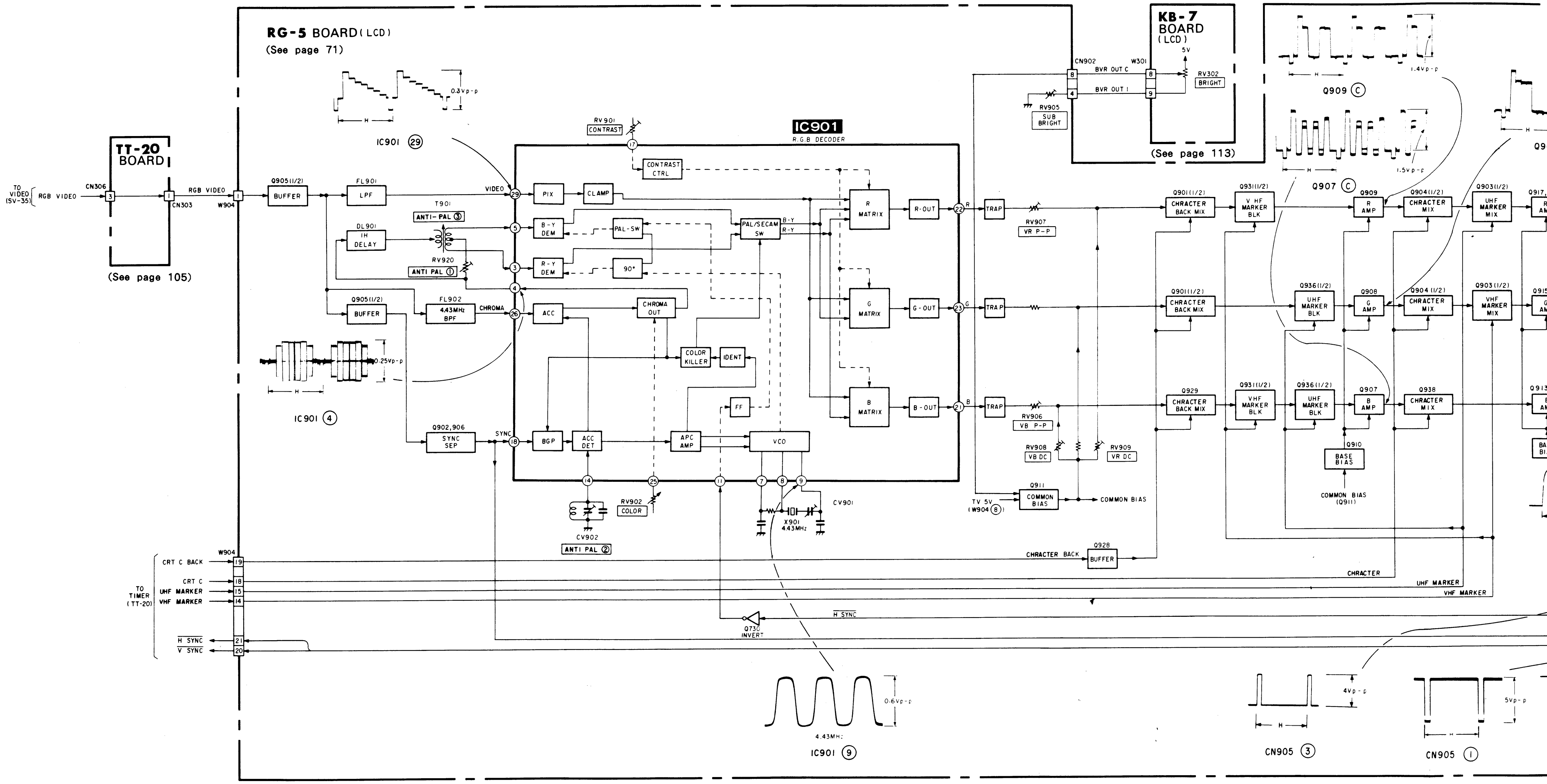

RG-5
(LCD TV)
D/A Converter
KB-6
(Function Switch)
KB-7
(Bright/Volume)
JK-34
(Video, Audio In/Out)
SV-35
(Video/Audio/Servo/
System Control/
Mechanism Drive)

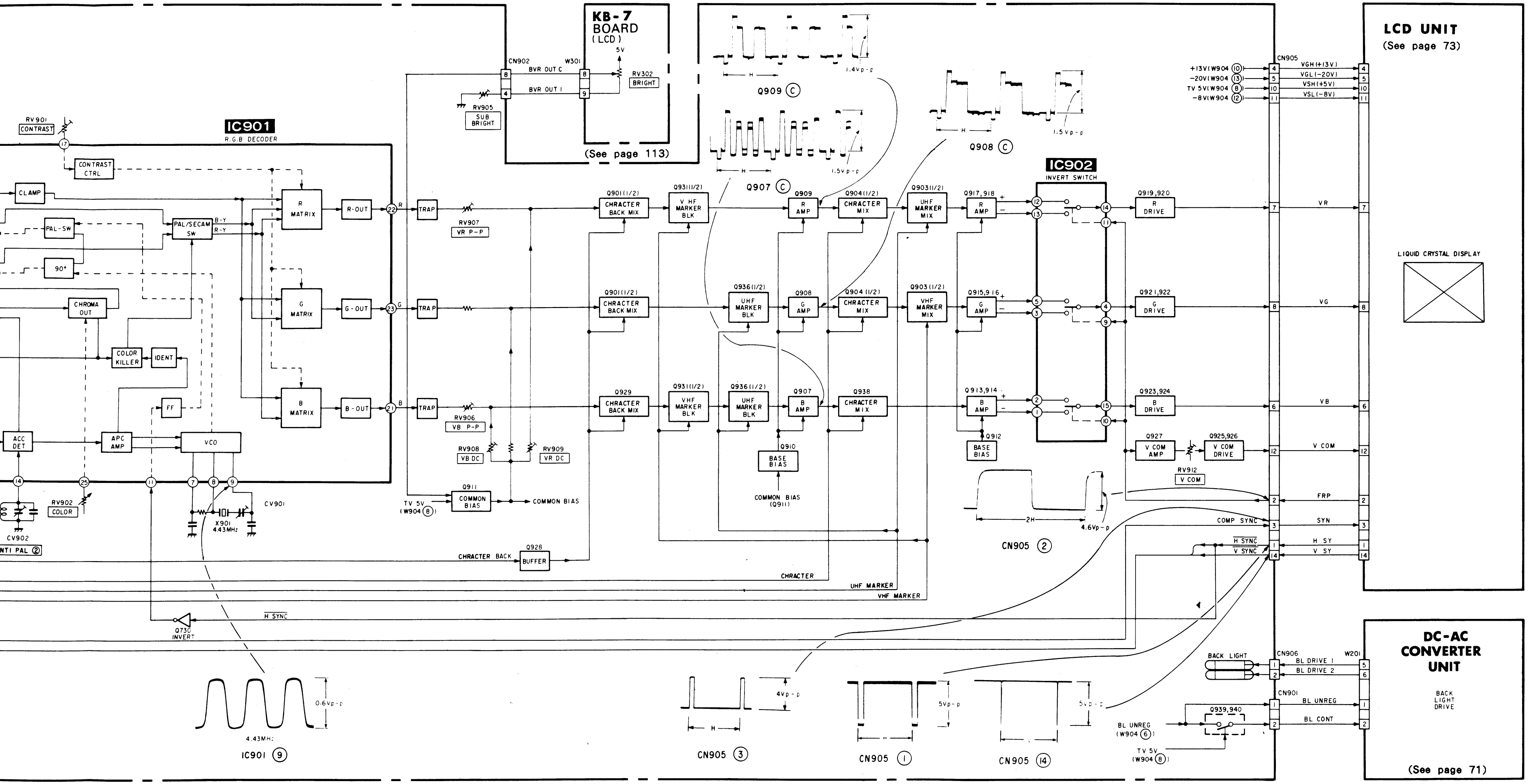
3-2. OVERALL BLOCK DIAGRAM


(See page 114)
SW UNIT
TIMER SET KEY
TIMER KEY, TIMER REC KEY
TT-20 BOARD
(See page 105)
IC371
IC372
VHF/UHF MARKER GENERATOR
IND0 ~ IND7
IC351
CHARACTOR GENERATOR
IC301
TIMER/TUNER CONTROL
TV ON
+KEY, -KEY
VHF/UHF
LI 3V
J101
EXT ANTENNA
TU101
VHF/UHF TUNER
IF
IC101
VIF/SIF
TU VIDEO
TU AUDIO
AFT
IC102
AFT UP/DOWN DETECT
AFT UP/DOWN
TU
D-A CONV
VC PWM
BV, BU, BS
LITHIUM BATTERY
(See page 108)
LI-11 BOARD
RG-5 BOARD
(See page 71)
IC901
RGB VIDEO
R,G,B DECODER
R
G
B
CHARACTER VHF/UHF MARKER MIX
IC902
LCD DRIVE
VR
VG
VB
V COM
VHF/UHF MARKER
CRTC, CRTC BACK
S901
LCD ON/OFF
BACK LIGHT
LCD UNIT
(See page 73)
LIQUID CRYSTAL DISPLAY
DC-AC CONVERTER
BACK LIGHT DRIVE
UNIT
(See page 71)
INNER BUS (SO, SI, SC)
RV302
BRIGHT
S301,302
DATA SCREEN ON/OFF COUNTER RESET
RV301
VOLUME
KB-7 BOARD
(See page 113)
REC PROOF
MP HG
ME/MP
FP-90 BOARD
(See page 114)
TAPE TOP SENSOR
T REEL FG SENSOR
D301
TAPE LED
(See page 115)
UC-1 BOARD
FP-89 BOARD
S REEL FG SENSOR
TAPE END SENSOR
CC DOWN
MODE SWITCH
(See page 114)
SV-35 BOARD (See page 79, 87, 92)
S601
VHF/UHF SWITCH
IC101
SERVO/SYSTEM CONTROL
REC PROOF
MP HG
ME/MP
TOP SENS
TOP END LED
IC102
T REEL FG
S REEL FG
REEL FG AMP
MECHANISM CONTROL
END SENS
MODE SW0-2
CC DOWN
DEW SENS
DEW SENSOR
DEW DETECT
DEW
IC301
IC302
IC303
M903
LOARDING MOTOR
LM LOAD, LM UNLOAD
LOADING MOTOR DRIVE
LD, UNLD
FE ON
DRUM ON, DRUM RVS
IC304
DRUM MOTOR DRIVE
IC305
PWM POWER DRIVE
IC303
INTEGRATION
DRUM ER
IC307
CAPSTAN MOTOR DRIVE
CAP ER
SERVO
CAP ON, CAP FWD
RF SW P
C FG
D PG, D FG
ATF ERROR
SEL1, SEL2
COMP SYNC
SP901
SPEAKER
J001
EARPHONE
IC001
AUDIO POWER AMP
(See page 116)
JK-34 BOARD
J702
VIDEO IN
AUDIO IN
J701
VIDEO OUT
RF DC OUT
AUDIO OUT
5V
IC600
IC701, IC900
CCD-2HDL BLOCK
Y/CHRMA PROCESS
TU VIDEO
VIDEO IN
VIDEO OUT
CAM VIDEO
PB RF
C SYNC
REC Y
REC C
REC AFM
REC ATF
IC501
REC/PB AMP
CH2
CH1
RF SWP
DRUM
CH2
CH1
FLYINEG ERASE
FLYINE ERASE OSC
FE
M901 DRUM MOTOR
DRUM PG, FG
IC306
WAVE SHAPER
DPG, DFG
CFG
M902 CASPSTAN MOTOR
CAPSTAN FG
HIC001
AUDIO PROCESS
REC AFM
PB RF
IC201
PB RF
CLOG, SP/LP DETECT
CLOG, PB SP/LP
IC202
ATF SERVO
ATF ERROR
SEL1, SEL2
CA-15 BOARD
CAMERA VIDEO
CAMERA AUDIO
START/STOP
CAM UNREG
CN603
CAMERA
(See page 116)
VIDEO CONTROL SERIAL DATA (SI, SCK, VIDEO CS)

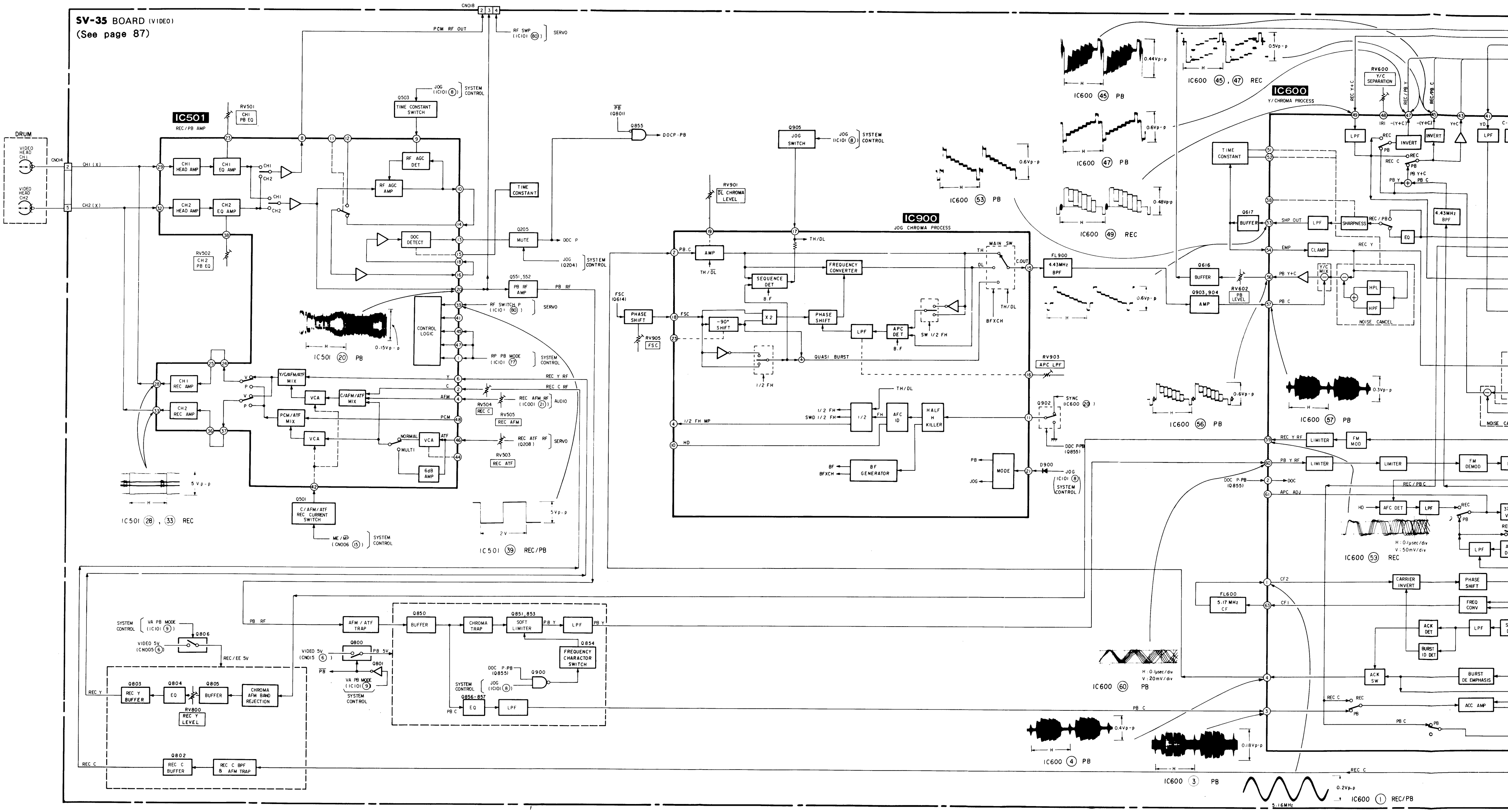

RG-5 BOARD
(See page 71)
IC901
RGB VIDEO
R,G,B DECODER
R
G
B
CHARACTER VHF/UHF MARKER MIX
IC902
LCD DRIVE
VR
VG
VB
V COM
VHF/UHF MARKER
CRTC,CRTC BACK
S901
LCD ON/OFF
BACK LIGHT
LCD UNIT
(See page 73)
LIQUID CRYSTAL DISPLAY
DC-AC CONVERTER
BACK LIGT DRIVE
UNIT
(See page 71)
IC371
IC372
VHF/UHF MARKER GENERATOR
IC351
CHARACTOR GENERATOR
IND0 ~ IND7
301
INNER BUS (SO,SI,SC)
TV ON
+KEY, -KEY
VHF/UHF
LI 3V
LITHIUM BATTERY
(See page 108)
LI-11 BOARD
RV302
BRIGHT
S301,302
DATA SCREEN ON/OFF COUNTER RESET
RV301
VOLUME
KB-7
BOARD
(See page 113)
SV-35 BOARD (See page 79, 87, 92)
S601
VHF/UHF SWITCH
IC101
SERVO/ SYSTEM CONTROL
FP-90 BOARD
(See page 114)
(See page 115)
UC-1
BOARD
REC PROOF
MP HG
ME/MP
TAPE TOP SENSOR
T REEL FG SENSOR
D301 TAPE LED
TOP SENS
TOP END LED
FP-89 BOARD
S REEL FG SENSOR
TAPE END SENSOR
MODE SWITCH
CC DOWN
(See page 114)
IC102
REEL FG AMP
T REEL FG
S REEL FG
END SENS
MODE SWO-2
CC DOWN
DEW SENS
DEW SENSOR
DEW DETECT
DEW
S101
INPUT SELECT
MECHANISM CONTROL
POWER
EJECT
VIDEO ON
POWER ON
CAM ON
START/STOP
VIDEO, AUDIO CONTROL SIGNALS
CLOG, PB SP/LP
KB-6 BOARD
(See page 113)
S002,003
CHANNEL +,- BUTTON
S004 ~ 007, S009,010
FUNCTION BUTTON
S011
POWER SWITCH
S008
EJECT SWITCH
D001-003
INDICATION LED
IC301
IC302
IC303
M903 LOARDING MOTOR
LM LOAD, LM UNLOAD
LOADING MOTOR DRIVE
LD, UNLD
FE ON
500
IC900
L BLOCK
HRMA CESS
PB RF
C SYNC
REC Y
REC C
REC AFM
REC ATF
IC501
REC/PB AMP
CH2
CH1
RF SWP
DRUM
FLYINEG ERASE
FLYINE ERASE OSC
FE
DRUM ON, DRUM RVS
M901 DRUM MOTOR
DRUM PG,FG
IC304
DRUM MOTOR DRIVE
IC305
PWM POWER DRIVE
IC303
INTEGRATION
DRUM ER
CAP ER
M902 CASPSTAN MOTOR
CAPSTAN FG
IC307
CAPSTAN MOTOR DRIVE
IC306
WAVE SHAPER
DPG, DFG
CFG
SERVO
CAP ON, CAP FWD
RF SW P
C FG
D PG, D FG
ATF ERROR
SEL1, SEL2
COMP SYNC
IC201
CLOG, SP/LP DETECT
PB RF
CLOG, PB SP/LP
IC202
ATF SERVO
ATF ERROR
SEL1, SEL2
VIDEO CONTROL SERIAL DATA (SI, SCK, VIDEO CS)
PS-181 BOARD
(See page 119)
BL UNREG
MT UNRE A,B
SV UNREG
AU UNREG
IC101
IC102
SW 5V
VIDEO 5V
TV 5V
+13V
-8V
-20V
30V
SWITCHING REGULATOR
MAIN BATTERY
POWER ON
CAM ON
CAM UNREG

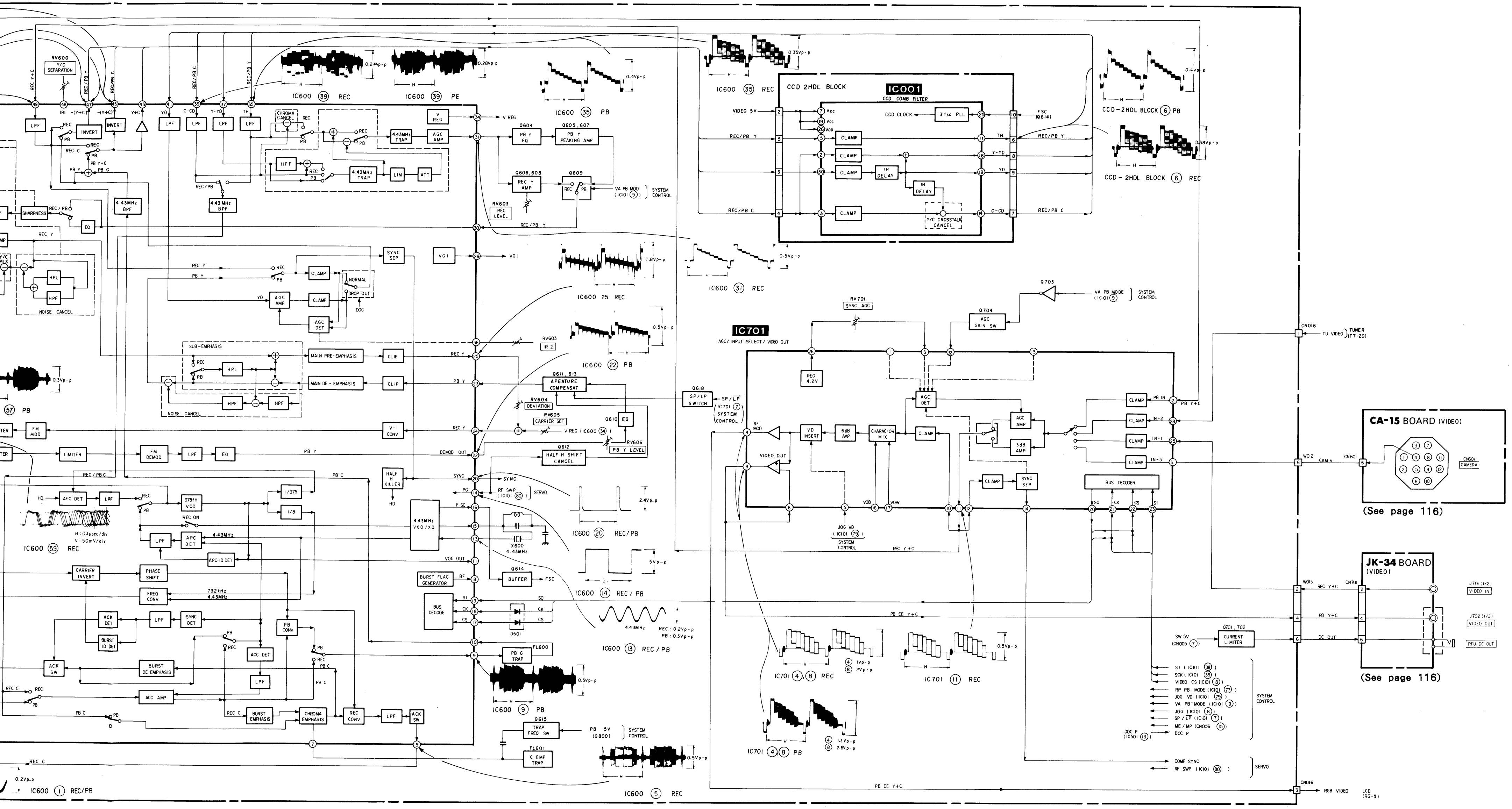
3-3. LCD VIDEO BLOCK DIAGRAM


RG-5 BOARD (LCD)
(See page 71)
TT-20 BOARD
(See page 105)
KB-7 BOARD (LCD)
(See page 113)
IC901
R.G.B DECODER
TO VIDEO (SV-35)
RGB VIDEO
CN306
CN303
W904
Q905 (1/2)
BUFFER
FL901
LPF
VIDEO
PIX
CLAMP
T901
ANTI-PAL ③
DL901
1H DELAY
RV920
ANTI PAL ①
B-Y DEM
R-Y DEM
PAL-SW
90°
PAL/SECAM SW
B-Y
R-Y
RV901
CONTRAST
CONTRAST CTRL
R MATRIX
G MATRIX
B MATRIX
R-OUT
G-OUT
B-OUT
TRAP
RV907
VR P-P
RV906
VB P-P
RV908
VB DC
RV909
VR DC
FL902
4.43MHz BPF
CHROMA
ACC
CHROMA OUT
COLOR KILLER
IDENT
FF
Q902,906
SYNC SEP
SYNC
BGP
ACC DET
APC AMP
VCO
RV902
COLOR
CV902
ANTI PAL ②
X901
4.43MHz
CV901
IC901 ㉙
0.3Vp-p
H
IC901 ④
0.25Vp-p
IC901 ⑨
0.6Vp-p
4.43MHz
CN902
W301
BVR OUT C
BVR OUT I
5V
RV302
BRIGHT
RV905
SUB BRIGHT
Q901 (1/2)
CHRACTER BACK MIX
Q929
CHRACTER BACK MIX
Q931 (1/2)
V HF MARKER BLK
Q936 (1/2)
UHF MARKER BLK
Q909
R AMP
Q908
G AMP
Q907
B AMP
Q904 (1/2)
CHRACTER MIX
Q938
CHRACTER MIX
Q903 (1/2)
UHF MARKER MIX
VHF MARKER MIX
Q910
BASE BIAS
COMMON BIAS (Q911)
Q911
COMMON BIAS
TV 5V (W904 ⑧)
Q928
BUFFER
CHRACTER BACK
CHRACTER
UHF MARKER
VHF MARKER
H SYNC
Q730
INVERT
Q909 Ⓒ
1.4Vp-p
Q907 Ⓒ
1.5Vp-p
CN905 ③
4Vp-p
CN905 ①
5Vp-p
CRT C BACK
CRT C
UHF MARKER
VHF MARKER
TO TIMER (TT-20)
H SYNC
V SYNC

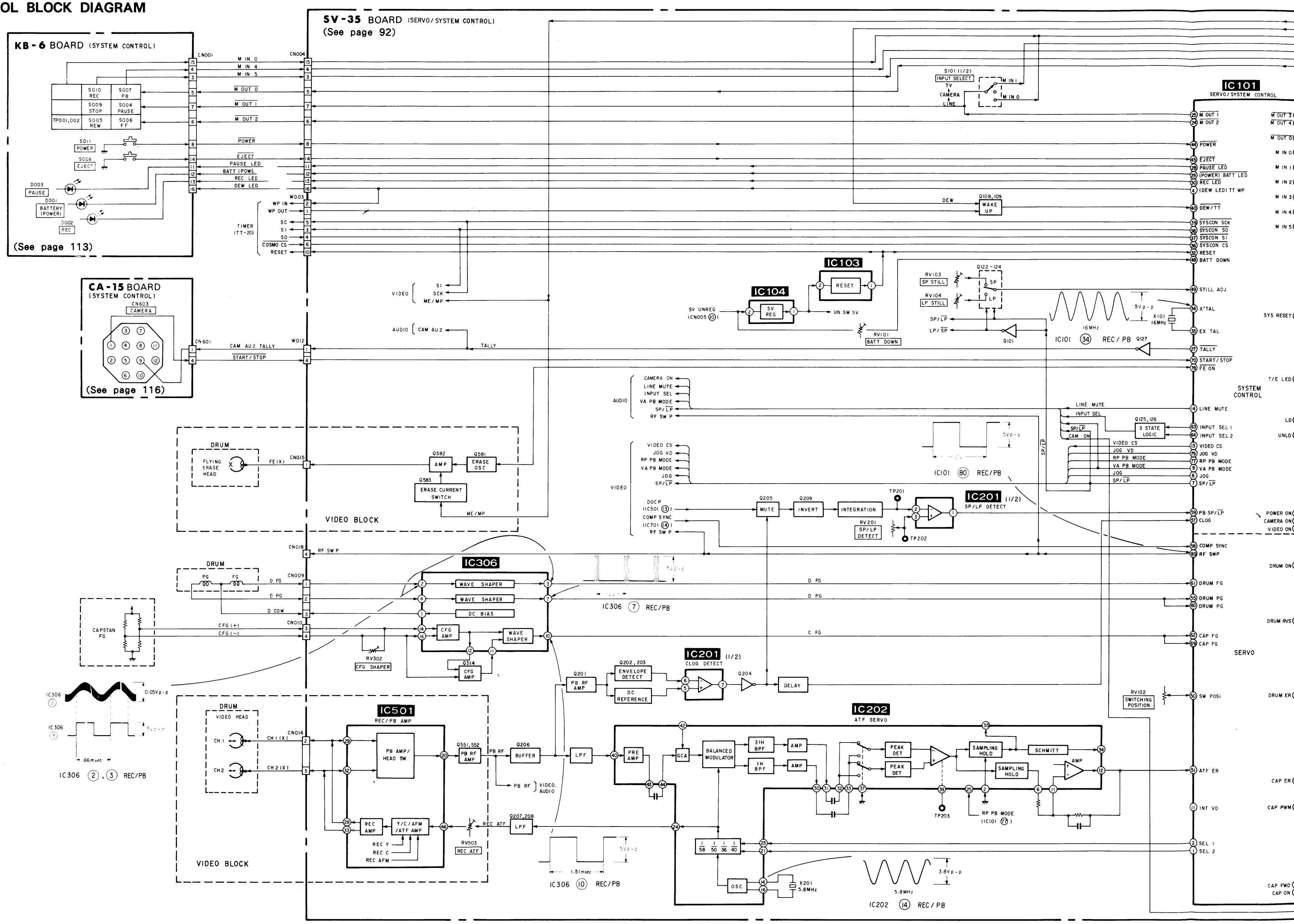

KB-7
BOARD
(LCD)
(See page 113)
CN902
W301
BVR OUT C
BVR OUT I
5V
RV302
BRIGHT
RV905
SUB BRIGHT
RV901
CONTRAST
IC901
R.G.B DECODER
CONTRAST CTRL
CLAMP
PAL-SW
PAL/SECAM SW
B-Y
R-Y
90°
CHROMA OUT
COLOR KILLER
IDENT
FF
ACC DET
APC AMP
VCO
R MATRIX
G MATRIX
B MATRIX
R-OUT
G-OUT
B-OUT
TRAP
RV907
VR P-P
RV906
VB P-P
RV908
VB DC
RV909
VR DC
Q911
COMMON BIAS
TV 5V
(W904 ⑧)
RV902
COLOR
CV902
ANTI PAL ②
X901
4.43MHz
CV901
Q928
BUFFER
CHRACTER BACK
CHRACTER
UHF MARKER
VHF MARKER
H SYNC
Q730
INVERT
Q901(1/2)
CHRACTER BACK MIX
Q931(1/2)
V HF MARKER BLK
Q909
R AMP
Q904(1/2)
CHRACTER MIX
Q903(1/2)
UHF MARKER MIX
Q936(1/2)
UHF MARKER BLK
Q908
G AMP
VHF MARKER MIX
Q929
VHF MARKER BLK
Q907
B AMP
Q938
Q910
BASE BIAS
COMMON BIAS
(Q911)
Q909 Ⓒ
1.4Vp-p
Q907 Ⓒ
1.5Vp-p
Q908 Ⓒ
1.5Vp-p
H
IC902
INVERT SWITCH
Q917,918
R AMP
Q915,916
G AMP
Q913,914
B AMP
Q912
BASE BIAS
Q919,920
R DRIVE
Q921,922
G DRIVE
Q923,924
B DRIVE
Q927
V COM AMP
Q925,926
V COM DRIVE
RV912
V COM
CN905 ②
2H
4.6Vp-p
CN905
+13V(W904 ⑩)
-20V(W904 ⑬)
TV 5V(W904 ⑧)
-8V(W904 ⑫)
VGH(+13V)
VGL(-20V)
VSH(+5V)
VSL(-8V)
VR
VG
VB
V COM
FRP
COMP SYNC
SYN
H SYNC
V SYNC
H SY
V SY
LCD UNIT
(See page 73)
LIQUID CRYSTAL DISPLAY
DC-AC CONVERTER UNIT
BACK LIGHT DRIVE
(See page 71)
CN906
W201
BACK LIGHT
BL DRIVE 1
BL DRIVE 2
CN901
BL UNREG
BL CONT
Q939,940
BL UNREG
(W904 ⑥)
TV 5V
(W904 ⑧)
0.6Vp-p
4.43MHz
IC901 ⑨
4Vp-p
CN905 ③
5Vp-p
CN905 ①
5Vp-p
CN905 ⑭

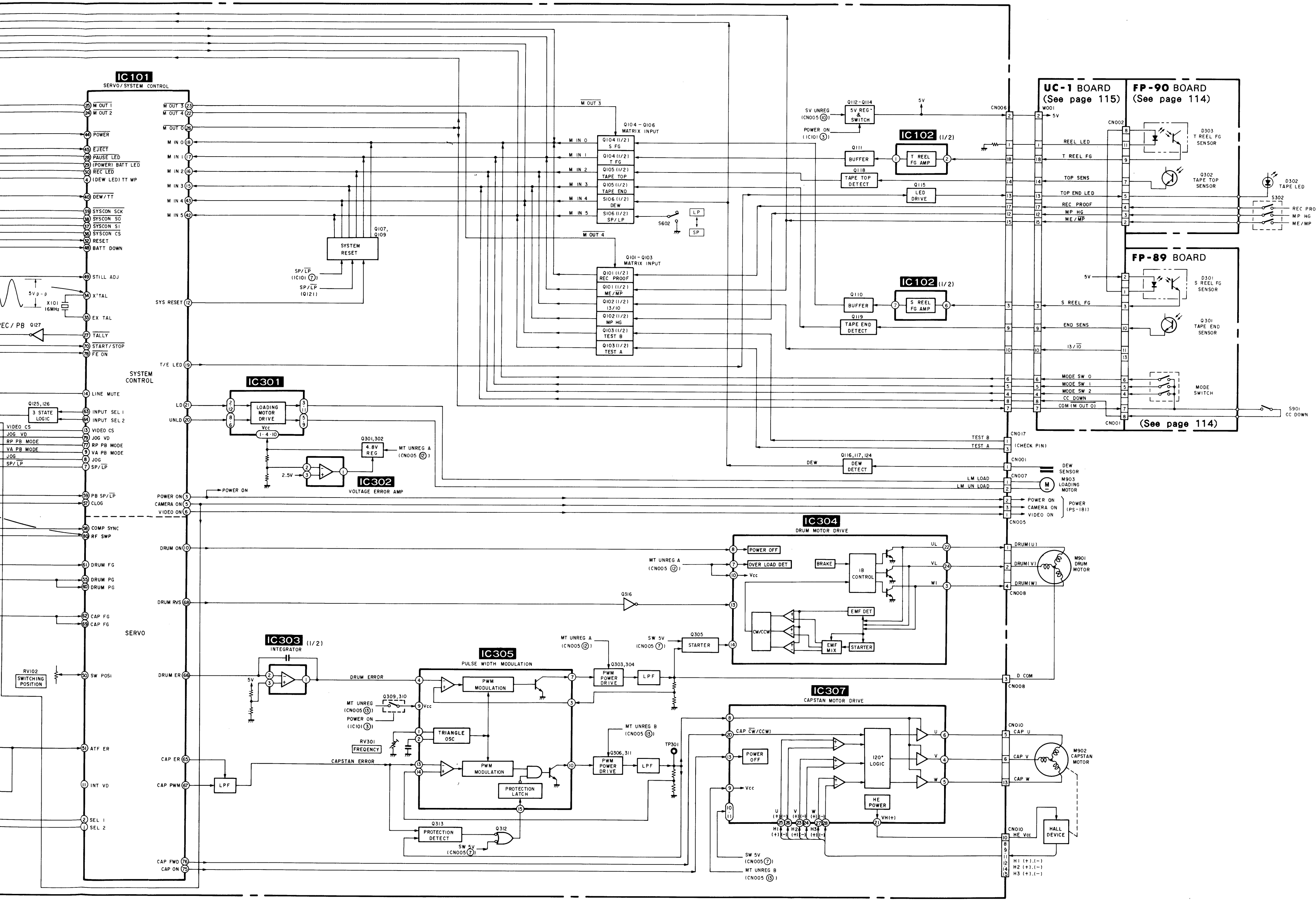
3-4. VIDEO BLOCK DIAGRAM


SV-35 BOARD (VIDEO)
(See page 87)
DRUM
VIDEO HEAD CH1
VIDEO HEAD CH2
CN014
CH1 (X)
CH2 (X)
CN018
PCM RF OUT
RF SWP (IC101 80)
SERVO
IC501
REC/PB AMP
RV501 CH1 PB EQ
RV502 CH2 PB EQ
CH1 HEAD AMP
CH1 EQ AMP
CH2 HEAD AMP
CH2 EQ AMP
RF AGC AMP
RF AGC DET
DOC DETECT
Q503 TIME CONSTANT SWITCH
JOG (IC101 8) SYSTEM CONTROL
TIME CONSTANT
Q205 MUTE
DOC P
JOG (Q204) SYSTEM CONTROL
PB (Q801)
Q855
DOCP·PB
Q551, 552 PB RF AMP
PB RF
RF SWITCH P (IC101 80) SERVO
CONTROL LOGIC
RP PB MODE (IC101 77) SYSTEM CONTROL
IC501 20 PB
0.15Vp-p
CH1 REC AMP
CH2 REC AMP
Y/C/AFM/ATF MIX
C/AFM/ATF MIX
PCM/ATF MIX
VCA
NORMAL
MULTI
6dB AMP
REC Y RF
REC C RF
RV504 REC C
RV505 REC AFM
REC AFM RF (IC001 21) AUDIO
REC ATF RF (Q208) SERVO
RV503 REC ATF
Q501 C/AFM/ATF REC CURRENT SWITCH
ME/MP (CN006 15) SYSTEM CONTROL
5Vp-p
IC501 28, 33 REC
IC501 39 REC/PB
SYSTEM CONTROL VA PB MODE (IC101 9)
Q806
VIDEO 5V (CN005 6)
REC/EE 5V
Q803 REC Y BUFFER
Q804 EQ
Q805 BUFFER
RV800 REC Y LEVEL
CHROMA AFM BAND REJECTION
Q802 REC C BUFFER
REC C BPF & AFM TRAP
REC Y
REC C
PB RF
AFM/ATF TRAP
VIDEO 5V (CN015 6)
Q800 PB 5V
Q801
VA PB MODE (IC101 9) SYSTEM CONTROL
Q850 BUFFER
CHROMA TRAP
Q851, 853 SOFT LIMITER
PB Y
LPF
Q854 FREQUENCY CHARACTOR SWITCH
DOC P.PB (Q855)
SYSTEM CONTROL JOG (IC101 8)
Q900
Q856-857 EQ
PB C
Q905 JOG SWITCH
JOG (IC101 8) SYSTEM CONTROL
RV901 DL CHROMA LEVEL
IC900
JOG CHROMA PROCESS
TH/DL
AMP
SEQUENCE DET
FREQUENCY CONVERTER
MAIN SW
FSC (Q614)
PHASE SHIFT
RV905 FSC
-90° SHIFT
X2
APC DET
SW 1/2 FH
QUASI BURST
1/2 FH
1/2 FH MP
HD
1/2
AFC ID
HALF H KILLER
BF GENERATOR
MODE
BFXCH
FL900 4.43MHz BPF
RV903 APC LPF
Q902 SYNC (IC600 29)
DOC P.PB (Q855)
D900 JOG (IC101 8) SYSTEM CONTROL
IC600 45 PB 0.44Vp-p
IC600 47 PB 0.6Vp-p
IC600 53 PB 0.6Vp-p
IC600 49 REC 0.48Vp-p
IC600 45, 47 REC 0.5Vp-p
IC600
Y/CHROMA PROCESS
RV600 Y/C SEPARATION
TIME CONSTANT
Q617 BUFFER
SHP OUT
SHARPNESS
EQ
4.43MHz BPF
INVERT
CLAMP
Q616 BUFFER
RV602 PB LEVEL
Q903, 904 AMP
Y/C MIX
HPL
HPF
NOISE CANCEL
IC600 56 PB 0.6Vp-p
IC600 57 PB 0.3Vp-p
LIMITER
FM MOD
FM DEMOD
REC Y RF
PB Y RF
DOC
APC ADJ
AFC DET
H: 0.1μsec/div V: 50mV/div
IC600 53 REC
CARRIER INVERT
PHASE SHIFT
FREQ CONV
FL600 5.17MHz CF
CF2
CF1
ACK DET
BURST ID DET
ACK SW
BURST DE EMPHASIS
ACC AMP
H: 0.1μsec/div V: 20mV/div
IC600 60 PB
IC600 4 PB 0.4Vp-p
IC600 3 PB 0.18Vp-p
IC600 1 REC/PB 0.2Vp-p
5.16MHz


RV600 Y/C SEPARATION
IC600 (39) REC
IC600 (39) PE
IC600 (35) PB
IC600 (35) REC
CCD 2HDL BLOCK
IC001
CCD COMB FILTER
CCD-2HDL BLOCK (6) PB
CCD-2HDL BLOCK (6) REC
CHROMA CANCEL
4.43MHz TRAP
AGC AMP
V REG
Q604 PB Y EQ
Q605, 607 PB Y PEAKING AMP
Q606,608 REC Y AMP
Q609
RV603 REC LEVEL
VA PB MOD (IC101 (9)) SYSTEM CONTROL
3 fsc PLL
CLAMP
1H DELAY
Y/C CROSSTALK CANCEL
FSC (Q614)
SHARPNESS
4.43MHz BPF
NOISE CANCEL
SYNC SEP
VGI
IC600 25 REC
IC600 (31) REC
IC600 (22) PB
NORMAL
DROP OUT
AGC DET
SUB-EMPHASIS
MAIN PRE-EMPHASIS
MAIN DE-EMPHASIS
CLIP
RV603 IR 2
Q611, 613 APEATURE COMPENSAT
RV604 DEVIATION
RV605 CARRIER SET
Q610 EQ
RV606 PB Y LEVEL
Q612 HALF H SHIFT CANCEL
Q618 SP/LP SWITCH
IC701 (7) SYSTEM CONTROL
V-I CONV
FM MOD
LIMITER
FM DEMOD
LPF
EQ
HALF H KILLER
AFC DET
375fH VCO
1/375
1/8
APC DET
APC-ID DET
4.43MHz VXO/XO
X600 4.43MHz
IC600 (20) REC/PB
IC600 (14) REC/PB
IC600 (53) REC
H: 0.1μsec/div V: 50mV/div
CARRIER INVERT
PHASE SHIFT
FREQ CONV
732kHz 4.43MHz
BURST FLAG GENERATOR
Q614 BUFFER
BUS DECODE
D601
ACK DET
BURST ID DET
SYNC DET
ACK SW
BURST DE EMPHASIS
PB CONV
ACC DET
ACC AMP
BURST EMPHASIS
CHROMA EMPHASIS
REC CONV
FL600 PB C TRAP
IC600 (13) REC/PB
REC: 0.2Vp-p PB: 0.3Vp-p
IC600 (9) PB
Q615 TRAP FREQ SW
PB 5V (Q800) SYSTEM CONTROL
FL601 C EMP TRAP
IC600 (5) REC
IC600 (1) REC/PB
IC600 (57) PB
Q703
VA PB MODE (IC101 (9)) SYSTEM CONTROL
RV701 SYNC AGC
Q704 AGC GAIN SW
IC701
AGC/INPUT SELECT/VIDEO OUT
REG 4.2V
VD INSERT
6dB AMP
CHARACTOR MIX
3dB AMP
BUS DECODER
JOG VD (IC101 (79)) SYSTEM CONTROL
IC701 (4),(8) REC
IC701 (11) REC
IC701 (4),(8) PB
CN016
TU VIDEO TUNER (TT-20)
CA-15 BOARD (VIDEO)
CN601 CAMERA
(See page 116)
JK-34 BOARD (VIDEO)
J701(1/2) VIDEO IN
J702(1/2) VIDEO OUT
RFU DC OUT
SW 5V (CN005 (7))
Q701, 702 CURRENT LIMITER
SI (IC101 (38))
SCK (IC101 (39))
VIDEO CS (IC101 (13))
RP PB MODE (IC101 (77))
JOG VD (IC101 (79))
VA PB MODE (IC101 (9))
JOG (IC101 (8))
SP/LP (IC101 (7))
ME/MP (CN006 (15))
DOC P (IC501 (13))
SYSTEM CONTROL
COMP SYNC
RF SWP (IC101 (80))
SERVO
RGB VIDEO
LCD (RG-5)

3-5. SERVO, SYSTEM CONTROL BLOCK DIAGRAM


KB-6 BOARD (SYSTEM CONTROL)
(See page 113)
S010 REC
S007 PB
S009 STOP
S004 PAUSE
TP001,002
S005 REW
S006 FF
S011 POWER
S008 EJECT
D003 PAUSE
D001 BATTERY (POWER)
D002 REC
CN001
CN004
M IN 0
M IN 4
M IN 5
M OUT 0
M OUT 1
M OUT 2
POWER
EJECT
PAUSE LED
BATT (POWE
REC LED
DEW LED
W003
WP IN
WP OUT
TIMER (TT-20)
SC
SI
SO
COSMO CS
RESET
CA-15 BOARD (SYSTEM CONTROL)
CN603 CAMERA
(See page 116)
CN601
W012
CAM AU2 TALLY
START/STOP
SV-35 BOARD (SERVO/SYSTEM CONTROL)
(See page 92)
S101 (1/2) INPUT SELECT
TV
CAMERA
LINE
M IN 1
M IN 0
IC101
SERVO/SYSTEM CONTROL
DEW
Q108,109 WAKE UP
VIDEO
SI
SCK
ME/MP
AUDIO
CAM AU2
TALLY
IC103
RESET
IC104
5V REG
SV UNREG (CN005 10)
UN SW 5V
RV103 SP STILL
RV104 LP STILL
Q122-124
SP
LP
SP/LP
LP/SP
RV101 BATT DOWN
Q121
16MHz
5Vp-p
X101 16MHz
IC101 34 REC/PB
Q127
M OUT 1
M OUT 2
POWER
EJECT
PAUSE LED
(POWER) BATT LED
REC LED
(DEW LED) TT WP
DEW/TT
SYSCON SCK
SYSCON SO
SYSCON SI
SYSCON CS
RESET
BATT DOWN
STILL ADJ
X'TAL
EX TAL
TALLY
START/STOP
FE ON
LINE MUTE
INPUT SEL 1
INPUT SEL 2
VIDEO CS
JOG VD
RP PB MODE
VA PB MODE
JOG
SP/LP
PB SP/LP
CLOG
COMP SYNC
RF SWP
DRUM FG
DRUM PG
DRUM PG
CAP FG
CAP FG
SW POSI
ATF ER
INT VD
SEL 1
SEL 2
SYSTEM CONTROL
SERVO
M OUT 3
M OUT 4
M OUT 0
M IN 0
M IN 1
M IN 2
M IN 3
M IN 4
M IN 5
SYS RESET
T/E LED
LD
UNLD
POWER ON
CAMERA ON
VIDEO ON
DRUM ON
DRUM RVS
DRUM ER
CAP ER
CAP PWM
CAP FWD
CAP ON
CAMERA ON
LINE MUTE
INPUT SEL
VA PB MODE
SP/LP
RF SW P
VIDEO CS
JOG VD
RP PB MODE
VA PB MODE
JOG
SP/LP
Q125,126 3 STATE LOGIC
CAM ON
IC101 80 REC/PB
5Vp-p
DOC P (IC501 13)
COMP SYNC (IC701 14)
RF SW P
Q205 MUTE
Q209 INVERT
INTEGRATION
TP201
TP202
RV201 SP/LP DETECT
IC201 (1/2) SP/LP DETECT
DRUM
FLYING ERASE HEAD
FE (X)
CN015
Q582 AMP
Q581 ERASE OSC
Q583 ERASE CURRENT SWITCH
ME/MP
VIDEO BLOCK
CN018
RF SW P
IC306
DRUM
PG
FG
CN009
D FG
D PG
D COM
WAVE SHAPER
WAVE SHAPER
DC BIAS
CFG AMP
WAVE SHAPER
CAPSTAN FG
CN010
CFG (+)
CFG (−)
RV302 CFG SHAPER
Q314 CFG AMP
IC306 7 REC/PB
C FG
IC306 2
IC306 3
0.05Vp-p
5Vp-p
.66msec
IC306 2, 3 REC/PB
Q201 PB RF AMP
Q202,203 ENVELOPE DETECT
DC REFERENCE
IC201 (1/2) CLOG DETECT
Q204
DELAY
RV102 SWITCHING POSITION
DRUM
VIDEO HEAD
CH 1
CH 2
CN014
CH 1 (X)
CH 2 (X)
IC501 REC/PB AMP
PB AMP/HEAD SW
REC AMP
Y/C/AFM/ATF AMP
REC Y
REC C
REC AFM
Q551,552 PB RF AMP
PB RF
Q206 BUFFER
PB RF VIDEO, AUDIO
RV503 REC ATF
Q207,208 LPF
REC ATF
VIDEO BLOCK
5Vp-p
1.51msec
IC306 10 REC/PB
LPF
IC202 ATF SERVO
PRE AMP
GCA
BALANCED MODULATOR
3fH BPF
fH BPF
AMP
AMP
PEAK DET
PEAK DET
SAMPLING HOLD
SAMPLING HOLD
SCHMITT
AMP
TP203
RP PB MODE (IC101 77)
OSC
X201 5.8MHz
5.8MHz
3.8Vp-p
IC202 14 REC/PB


IC101
SERVO/SYSTEM CONTROL
M OUT 1
M OUT 2
POWER
EJECT
PAUSE LED
(POWER) BATT LED
REC LED
(DEW LED) TT WP
DEW/TT
SYSCON SCK
SYSCON SO
SYSCON SI
SYSCON CS
RESET
BATT DOWN
STILL ADJ
X'TAL
EX TAL
5V p-p
X101 16MHz
TALLY
START/STOP
FE ON
SYSTEM CONTROL
LINE MUTE
Q125,126
3 STATE LOGIC
INPUT SEL 1
INPUT SEL 2
VIDEO CS
JOG VD
RP PB MODE
VA PB MODE
JOG
SP/LP
PB SP/LP
CLOG
COMP SYNC
RF SWP
DRUM FG
DRUM PG
DRUM PG
CAP FG
CAP FG
SERVO
RV102
SWITCHING POSITION
SW POSI
ATF ER
INT VD
SEL 1
SEL 2
EC/PB
Q127
M OUT 3
M OUT 4
M OUT 0
M IN 0
M IN 1
M IN 2
M IN 3
M IN 4
M IN 5
SYS RESET
T/E LED
LD
UNLD
POWER ON
CAMERA ON
VIDEO ON
DRUM ON
DRUM RVS
DRUM ER
CAP ER
CAP PWM
CAP FWD
CAP ON
SYSTEM RESET
Q107, Q109
SP/LP (IC101 ⑦)
SP/LP (Q121)
Q104 – Q106 MATRIX INPUT
Q104 (1/2) S FG
Q104 (1/2) T FG
Q105 (1/2) TAPE TOP
Q105 (1/2) TAPE END
S106 (1/2) DEW
S106 (1/2) SP/LP
S602
LP
SP
M OUT 4
Q101 – Q103 MATRIX INPUT
Q101 (1/2) REC PROOF
Q101 (1/2) ME/MP
Q102 (1/2) 13/10
Q102 (1/2) MP HG
Q103 (1/2) TEST B
Q103 (1/2) TEST A
IC301
LOADING MOTOR DRIVE
Vcc
1·4·10
Q301,302
4.8V REG
MT UNREG A (CN005 ⑫)
2.5V
IC302
VOLTAGE ERROR AMP
POWER ON
IC303 (1/2)
INTEGRATOR
5V
DRUM ERROR
CAPSTAN ERROR
LPF
IC305
PULSE WIDTH MODULATION
PWM MODULATION
TRIANGLE OSC
PWM MODULATION
PROTECTION LATCH
MT UNREG (CN005 ⑬)
POWER ON (IC101 ③)
Q309,310
Vcc
RV301 FREQUENCY
Q313
PROTECTION DETECT
Q312
SW 5V (CN005 ⑦)
MT UNREG A (CN005 ⑫)
Q303,304
PWM POWER DRIVE
LPF
SW 5V (CN005 ⑦)
Q305
STARTER
Q316
MT UNREG B (CN005 ⑬)
Q306,311
PWM POWER DRIVE
LPF
TP301
IC304
DRUM MOTOR DRIVE
MT UNREG A (CN005 ⑫)
POWER OFF
OVER LOAD DET
Vcc
BRAKE
18 CONTROL
UL
VL
WL
EMF DET
CW/CCW
EMF MIX
STARTER
IC307
CAPSTAN MOTOR DRIVE
CAP CW/CCW
POWER OFF
Vcc
120° LOGIC
HE POWER
VH(+)
U V W
(+)(-)
H1 H2 H3
SW 5V (CN005 ⑦)
MT UNREG B (CN005 ⑬)
SV UNREG (CN005 ⑩)
POWER ON (IC101 ③)
Q112 – Q114
5V REG & SWITCH
5V
IC102 (1/2)
Q111
BUFFER
T REEL FG AMP
Q118
TAPE TOP DETECT
Q115
LED DRIVE
IC102 (1/2)
Q110
BUFFER
S REEL FG AMP
Q119
TAPE END DETECT
TEST B
TEST A
CN017
(CHECK PIN)
Q116,117,124
DEW
DEW DETECT
CN001
DEW SENSOR
CN007
LM LOAD
LM UN LOAD
M903 LOADING MOTOR
POWER ON
CAMERA ON
VIDEO ON
POWER (PS-181)
CN005
DRUM (U)
DRUM (V)
DRUM (W)
CN008
M901 DRUM MOTOR
D COM
CN008
CN010
CAP U
CAP V
CAP W
M902 CAPSTAN MOTOR
CN010
HE Vcc
HALL DEVICE
H1 (+),(-)
H2 (+),(-)
H3 (+),(-)
CN006
UC-1 BOARD (See page 115)
W001
5V
REEL LED
T REEL FG
TOP SENS
TOP END LED
REC PROOF
MP HG
ME/MP
S REEL FG
END SENS
13/10
MODE SW 0
MODE SW 1
MODE SW 2
CC DOWN
COM (M OUT 0)
CN001
FP-90 BOARD (See page 114)
CN002
D303 T REEL FG SENSOR
Q302 TAPE TOP SENSOR
D302 TAPE LED
S302
REC PROOF
MP HG
ME/MP
FP-89 BOARD
5V
D301 S REEL FG SENSOR
Q301 TAPE END SENSOR
MODE SWITCH
S901 CC DOWN
(See page 114)

3-6. SYSTEM CONTROL — VIDEO, AUDIO BLOCK INTERFACE

Signal	I/O	Pin No.	STOP	FF	REW	CUE	REVIEW	PB	PB · PAUSE	REC	REC · PAUSE
ME/$\overline{\text{MP}}$	O	Pin ⑮ of CN006 on SV-35 board	*1	*1	*1	*1	*1	*1	*1	*1	*1
SP/$\overline{\text{LP}}$	O	Pin ⑦ of IC101 on SV-35 board	H/L	H/L	H/L	*2	*2	*2	*2	*3	*3
JOG	O	Pin ⑧ of IC101 on SV-35 board	L	L	L	H	H	L	H	L	L
VA PB MODE	O	Pin ⑨ of IC101 on SV-35 board	L	L	L	H	H	H	H	L	L
VIDEO CS	O	Pin ⑬ of IC101 on SV-35 board	*4	*4	*4	*4	*4	*4	*4	*4	*4
LINE MUTE	O	Pin ⑭ of IC101 on SV-35 board	L	L	L	H	H	L	H	L	L
SYSCON SO (SI)	O	Pin ㊳ of IC101 on SV-35 board	*5	*5	*5	*5	*5	*5	*5	*5	*5
$\overline{\text{SYSCON SCK}}$ (SCK)	O	Pin ㊴ of IC101 on SV-35 board	*6	*6	*6	*6	*6	*6	*6	*6	*6
CLOG	I	Pin (57) of IC101 on SV-35 board	H	*7	*7	*7	*7	*7	*7	H	H
COMP SYNC	I	Pin (58) of IC101 on SV-35 board	*8	*8	*8	*8	*8	*8	*8	*8	*8
PB SP/$\overline{\text{LP}}$	I	Pin (59) of IC101 on SV-35 board	L	*9	*9	*9	*9	L	L	L	L
INPUT SEL 1	O	Pin (63) of IC101 on SV-35 board	*10	*10	*10	*10	*10	*10	*10	*10	*10
INPUT SEL 2	O	Pin (64) of IC101 on SV-35 board	*11	*11	*11	*11	*11	*11	*11	*11	*11
RP PB MODE	O	Pin (77) of IC101 on SV-35 board	H	H	H	H	H	H	H	L	H
$\overline{\text{FE ON}}$	O	Pin (78) of IC101 on SV-35 board	H	H	H	H	H	H	H	L	H
JOG VD	O	Pin (79) of IC101 on SV-35 board	L	L	L	*12	*12	L	*12	L	L
RF SWP	O	Pin (80) of IC101 on SV-35 board	1.8Vdc	*13	*13	*13	*13	*13	*13	*13	*13

* 1. "L" when using MP tape
* 2. According to recorded mode of PB tape (SP : "H", LP : "L")
* 3. According to SP/LP selector (S602) setting (SP : "H", LP : "L")
* 4. Approx. 20 msec period "L" pulse
* 5. 1V period "L" pulse train
* 6. 1V period "L" pulse train
* 7. Video head clog : "H", Normally : "L"
* 8. Positive polarity composite sync signal
* 9. SP mode recorded tape : "H", LP mode recorded tape : "L"
* 10. LINE input : "H", CAMERA input : "L", TV input : "H"
* 11. LINE input : "H", CAMERA input : "L", TV input : "L"
* 12. 1V period "H" pulse
* 13. 2V period duty 50% pulse

3-7. SYSTEM CONTROL — SERVO PERIPHERAL CIRCUIT INTERFACE

Signal	I/O	Pin No.	EJECTED	THREAD-ING	UN THREAD-ING	STOP	FF	REW	CUE	REVIEW	PB	PB · PAUSE	REC	REC · PAUS
SEL 2	O	Pin ① of IC101 on SV-35 board	H	H	H	H	H	H	*3	*3	*2	H	*1	L
SEL 1	O	Pin ② of IC101 on SV-35 board	H	H	H	H	H	H	*3	*3	*2	H	*1	H
DRUM ON	O	Pin ⑩ of IC101 on SV-35 board	L	H	H	L	H	H	H	H	H	H	H	H
INT VD	O	Pin ⑪ of IC101 on SV-35 board	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4
SW POSI	I	Pin ㊿ of IC101 on SV-35 board	*5	*5	*5	*5	*5	*5	*5	*5	*5	*5	*5	*5
ATF ER	I	Pin (51) of IC101 on SV-35 board	*6	*6	*6	*6	*7	*7	*7	*7	*7	*7	*6	*6
DRUM PG	I	Pins (55) and (60) of IC101 on SV-35 board	L	*8	*8	L	*8	*8	*8	*8	*8	*8	*8	*8
DRUM FG	I	Pin (61) of IC101 on SV-35 board	H	*9	*9	H	*9	*9	*9	*9	*9	*9	*9	*9
CAP FG	I	Pins (62) and (69) of IC101 on SV-35 board	H/L	PULSE	PULSE	H/L	*10	*10	*10	*10	*10	H/L	*10	H/L
CAP ER	O	Pin (65) of IC101 on SV-35 board	L	*11	*11	L	*11	*11	*11	*11	*11	L	*11	L
DRUM ER	O	Pin (66) of IC101 on SV-35 board	L	*12	*12	L	*12	*12	*12	*12	*12	*12	*12	*12
CAP PWM	O	Pin (67) of IC101 on SV-35 board	L	*13	*13	L	*13	*13	*13	*13	*13	L	*13	L
DRUM RVS	O	Pin (68) of IC101 on SV-35 board	*14	*14	*14	*14	*14	*14	*14	*14	*14	*14	*14	*14
CAP ON	O	Pin (75) of IC101 on SV-35 board	L	H	H	L	H	H	H	H	H	L	H	L
CAP FWD	O	Pin (76) of IC101 on SV-35 board	L	L	H	L	H	L	H	L	H	H	H	L
RF SWP	O	Pin (80) of IC101 on SV-35 board	1.8Vdc	*15	*15	*15	*15	*15	*15	*15	*15	*15	*15	*15

* 1. See Timing chart 1.
* 2. See Timing chart 2.
* 3. See Timing chart 3.
* 4. Not used.
* 5. DC voltage set with RV102 (Switching position adjustment)
* 6. Approx. 2.5 Vdc constant
* 7. ATF error voltage
* 8. 2V period "H" pulse
* 9. 1.4 msec period pulse
* 10. Pulses in proportion to frequency of tape speed
* 11. Pulse output for accelerating or braking.
* 12. 6 msec period PWM signal (tri-state) of "H", "L" and "HI-Z" (2.5 Vdc)
* 13. 64 μsec period PWM signal
* 14. Approx. 1.8 Vdc (Momentarily "L" in Threading/Unthreading)
* 15. 2V period duty 50% pulse

REC・PAUSE
＊1
＊3
L
L
＊4
L
＊5
＊6
H
＊8
L
＊10
＊11
H
H
L
＊13

nal
recorded

"L", TV

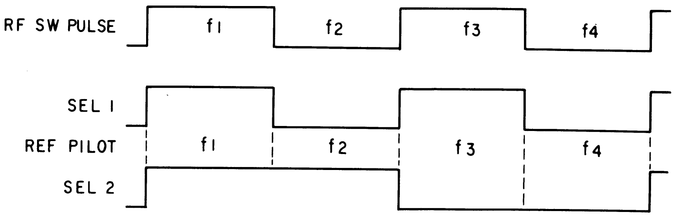
"L", TV

3-7. SYSTEM CONTROL — SERVO PERIPHERAL CIRCUIT INTERFACE

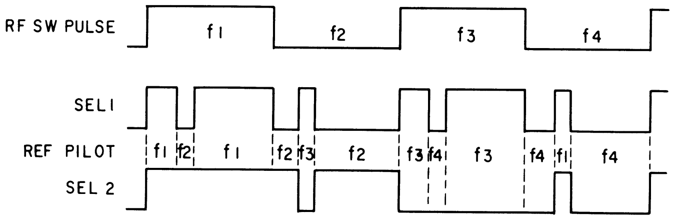
Signal	I/O	Pin No.	EJECTED	THREAD-ING	UN THREAD-ING	STOP	FF	REW	CUE	REVIEW	PB	PB・PAUSE	REC	REC・PAUSE
SEL 2	O	Pin ① of IC101 on SV-35 board	H	H	H	H	H	H	＊3	＊3	＊2	H	＊1	L
SEL 1	O	Pin ② of IC101 on SV-35 board	H	H	H	H	H	H	＊3	＊3	＊2	H	＊1	H
DRUM ON	O	Pin ⑩ of IC101 on SV-35 board	L	H	H	L	H	H	H	H	H	H	H	H
INT VD	O	Pin ⑪ of IC101 on SV-35 board	＊4	＊4	＊4	＊4	＊4	＊4	＊4	＊4	＊4	＊4	＊4	＊4
SW POSI	I	Pin ㊿ of IC101 on SV-35 board	＊5	＊5	＊5	＊5	＊5	＊5	＊5	＊5	＊5	＊5	＊5	＊5
ATF ER	I	Pin (51) of IC101 on SV-35 board	＊6	＊6	＊6	＊6	＊7	＊7	＊7	＊7	＊7	＊7	＊6	＊6
DRUM PG	I	Pins (55) and (60) of IC101 on SV-35 board	L	＊8	＊8	L	＊8	＊8	＊8	＊8	＊8	＊8	＊8	＊8
DRUM FG	I	Pin (61) of IC101 on SV-35 board	H	＊9	＊9	H	＊9	＊9	＊9	＊9	＊9	＊9	＊9	＊9
CAP FG	I	Pins (62) and (69) of IC101 on SV-35 board	H/L	PULSE	PULSE	H/L	＊10	＊10	＊10	＊10	＊10	H/L	＊10	H/L
CAP ER	O	Pin (65) of IC101 on SV-35 board	L	＊11	＊11	L	＊11	＊11	＊11	＊11	＊11	L	＊11	L
DRUM ER	O	Pin (66) of IC101 on SV-35 board	L	＊12	＊12	L	＊12	＊12	＊12	＊12	＊12	＊12	＊12	＊12
CAP PWM	O	Pin (67) of IC101 on SV-35 board	L	＊13	＊13	L	＊13	＊13	＊13	＊13	＊13	L	＊13	L
DRUM RVS	O	Pin (68) of IC101 on SV-35 board	＊14	＊14	＊14	＊14	＊14	＊14	＊14	＊14	＊14	＊14	＊14	＊14
CAP ON	O	Pin (75) of IC101 on SV-35 board	L	H	H	L	H	H	H	H	H	L	H	L
CAP FWD	O	Pin (76) of IC101 on SV-35 board	L	L	H	L	H	L	H	L	H	H	H	L
RF SWP	O	Pin (80) of IC101 on SV-35 board	1.8Vdc	＊15	＊15	＊15	＊15	＊15	＊15	＊15	＊15	＊15	＊15	＊15

＊1. See Timing chart 1.
＊2. See Timing chart 2.
＊3. See Timing chart 3.
＊4. Not used.
＊5. DC voltage set with RV102 (Switching position adjustment)
＊6. Approx. 2.5 Vdc constant
＊7. ATF error voltage
＊8. 2V period "H" pulse
＊9. 1.4 msec period pulse
＊10. Pulses in proportion to frequency of tape speed
＊11. Pulse output for accelerating or braking.
＊12. 6 msec period PWM signal (tri-state) of "H", "L" and "HI-Z" (2.5 Vdc)
＊13. 64 μsec period PWM signal
＊14. Approx. 1.8 Vdc (Momentarily "L" in Threading/Unthreading)
＊15. 2V period duty 50% pulse

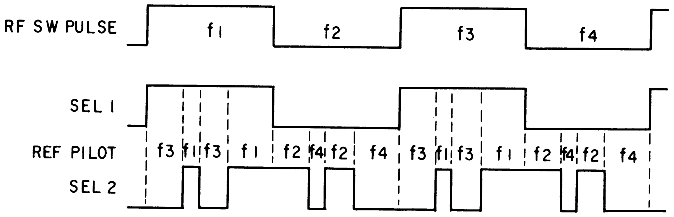
Timing chart 1 (REC)


RF SW PULSE
f1
f2
f3
f4
SEL 1
REF PILOT
f1
f2
f3
f4
SEL 2

Timing chart 2 (PB)


RF SW PULSE
f1
f2
f3
f4
SEL 1
REF PILOT
f1
f2
f1
f2
f3
f2
f3
f4
f3
f4
f1
f4
SEL 2

Timing chart 3 (CUE/REVIEW)


RF SW PULSE
f1
f2
f3
f4
SEL 1
REF PILOT
f3
f1
f3
f1
f2
f4
f2
f4
f3
f1
f3
f1
f2
f4
f2
f4
SEL 2

3-8. SYSTEM CONTROL — SYSTEM CONTROL PERIPHERAL CIRCUIT INTERFACE

Signal	I/O	Pin No.	I/O Level
POWER ON	O	Pin ③ of IC101 on SV-35 board	"H" when power is ON, "L" when OFF.
(DEW LAMP) TT WP	O	Pin ④ of IC101 on SV-35 board	Normally: "H" ("L" pulse is output when power is turned on from off.)
CAMERA ON	O	Pin ⑤ of IC101 on SV-35 board	"H" when INPUT SELECT switch (S101 on SV-35 board) is set to CAMERA position with power ON.
VIDEO ON	O	Pin ⑥ of IC101 on SV-35 board	"H" in REC, PB mode, etc.,(Other : "L")
SP/$\overline{\text{LP}}$	O	Pin ⑦ of IC101 on SV-35 board	"H" in SP recording mode or playback of recorded tape in SP mode
SYS RESET	O	Pin ⑫ of IC101 on SV-35 board	Normally : "L" ("H" when installing the main battery)
M IN 3	I	Pin ⑮ of IC101 on SV-35 board	No key matrix input signal : "H" (Other : "L")
M IN 2	I	Pin ⑯ of IC101 on SV-35 board	No key matrix input signal : "H" (Other : "L")
M IN 1	I	Pin ⑰ of IC101 on SV-35 board	No key matrix input signal : "H" (Other : "L")
M IN 0	I	Pin ⑱ of IC101 on SV-35 board	No key matrix input signal : "H" (Other : "L")
T/E LED	O	Pin ⑲ of IC101 on SV-35 board	STOP/PB/REC/PB・PAUSE/REC・PAUSE : 170 msec period "H" pulse, CUE/REVIEW : 60 msec period "H" pulse, FF/REW : 12 msec period "H" pulse, EJECT or CASSETTE IN detecting : 22 msec period "H" pulse 20 msec period "H" pulse
UNLD	O	Pin ⑳ of IC101 on SV-35 board	Normally : "L" ("H" in Unthreading, pulse is output in Mechanical mode transition)
LD	O	Pin ㉑ of IC101 on SV-35 board	Normally : "L" ("H" in Threading, "H" pulse is output in Mechanical mode transition)
M OUT 4	O	Pin ㉒ of IC101 on SV-35 board	20 msec period "H" pulse
M OUT 3	O	Pin ㉓ of IC101 on SV-35 board	20 msec period "H" pulse
$\overline{\text{M OUT 2}}$	O	Pin ㉔ of IC101 on SV-35 board	20 msec period "L" pulse
$\overline{\text{M OUT 1}}$	O	Pin ㉕ of IC101 on SV-35 board	20 msec period "L" pulse
$\overline{\text{M OUT 0}}$	O	Pin ㉖ of IC101 on SV-35 board	20 msec period "L" pulse
$\overline{\text{TALLY}}$	O	Pin ㉗ of IC101 on SV-35 board	Normally: "H" ("L" in REC mode with INPUT SELECT switch is set to CAMERA position)
$\overline{\text{PAUSE LED}}$	O	Pin ㉘ of IC101 on SV-35 board	Normally : "H" ("L" in PB・PAUSE or REC・PAUSE mode)
$\overline{\text{(POWER) BATT LED}}$	O	Pin ㉙ of IC101 on SV-35 board	Power ON : "L" (Pulse is output when battery voltage is decreased.)

Signal	I/O	Pin No.	I/O Level
$\overline{\text{REC LED}}$	O	Pin ㉚ of IC101 on SV-35 board	Normally : "H" ("L" in REC or REC・PAUSE mode)
$\overline{\text{RESET}}$	I	Pin ㉜ of IC101 on SV-35 board	Normally : "H" (Reset : "L")
$\overline{\text{SYSCON CS}}$	I	Pin ㊱ of IC101 on SV-35 board	1V period "L" pulse
SYSCON SI	I	Pin ㊲ of IC101 on SV-35 board	1V period "H" pulse train
SYSCON SO	O	Pin ㊳ of IC101 on SV-35 board	1V period "L" pulse train
$\overline{\text{SYSCON SCK}}$	I/O	Pin ㊴ of IC101 on SV-35 board	1V period "L" pulse train
$\overline{\text{DEW}}$/TT	I	Pin ㊵ of IC101 on SV-35 board	Normally: "H" ("L" when WAKE UP signal from timer/tuner microcomputer (IC301 on TT-20 board) becomes "L" or DEW)
M IN 5	I	Pin ㊷ of IC101 on SV-35 board	No key matrix input signal : "H" (Other : "L")
M IN 4	I	Pin ㊸ of IC101 on SV-35 board	No key matrix input signal : "H" (Other : "L")
$\overline{\text{POWER}}$	I	Pin ㊹ of IC101 on SV-35 board	Normally : "H" ("L" when POWER switch (S011 on KB-6 board) is turned on.)
$\overline{\text{EJECT}}$	I	Pin ㊺ of IC101 on SV-35 board	Normally : "H" ("L" when EJECT switch (S008 on KB-6 board) is pressed.)
BATT DOWN	I	Pin ㊽ of IC101 on SV-35 board	Input main battery voltage (SV UNREG) is divided by RV101 (battery down adjustment) and input.
STILL ADJ	I	Pin ㊾ of IC101 on SV-35 board	DC voltage that is set by RV103 (SP STILL adjustment) or RV104 (LP STILL adjustment) is input.
CLOG	I	Pin (57) of IC101 on SV-35 board	Normal playback : "L" ("H" when PB RF signal is not reproduced due to head clog, etc..
PB SP/$\overline{\text{LP}}$	I	Pin (59) of IC101 on SV-35 board	Recording speed mode detection signal in FF, REW, CUE or REVIEW ("H" in SP mode, "L" in LP mode)
START/STOP	O	Pin (70) of IC101 on SV-35 board	Normally : "H" ("L" when START/STOP button of camera is pressed.)

3-9. SYSTEM CONTROL — MECHANISM BLOCK INTERFACE

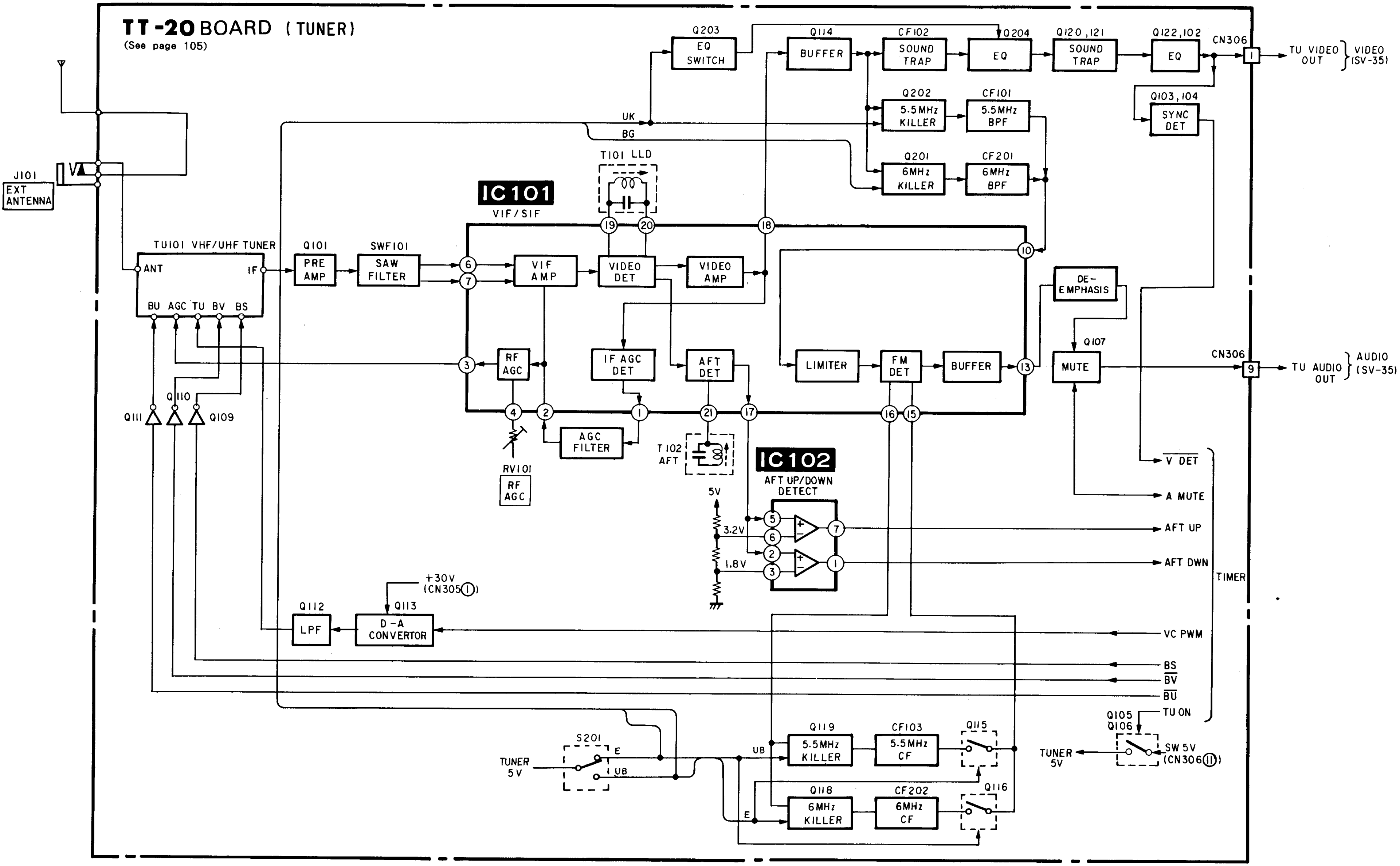
<table>
<tr><th>Signal</th><th>I/O</th><th>Pin No.</th><th>I/O Level</th></tr>
<tr><td>S REEL FG</td><td>I</td><td>Pin ③ of CN006 on SV-35 board</td><td>Pulse (Approx. 2.5 Vp-p) that is generated by S-reel rotation.
It is approx. 1 sec period in REC/PB (SP) mode.</td></tr>
<tr><td>MODE SW 2</td><td>I</td><td>Pin ④ of CN006 on SV-35 board</td><td rowspan="4">Pins are connected to mode switch for mechanical position detection.
<table>
<tr><th></th><th>EJECTED</th><th>THREADING UNTHREADING</th><th>STOP</th><th>REC/PB/FF/ REW/CUE/ REVIEW/PAUSE</th></tr>
<tr><td>MODE SW 2 (④-⑦)</td><td>○</td><td>○</td><td>×</td><td>○</td></tr>
<tr><td>MODE SW 1 (⑤-⑦)</td><td>×</td><td>○</td><td>○</td><td>×</td></tr>
<tr><td>MODE SW 0 (⑥-⑦)</td><td>×</td><td>×</td><td>○</td><td>○</td></tr>
</table>
×……Open
○……Short</td></tr>
<tr><td>MODE SW 1</td><td>I</td><td>Pin ⑤ of CN006 on SV-35 board</td></tr>
<tr><td>MODE SW 0</td><td>I</td><td>Pin ⑥ of CN006 on SV-35 board</td></tr>
<tr><td>$\overline{\text{M OUT 0}}$ (COM)</td><td>O</td><td>Pin ⑦ of CN006 on SV-35 board</td></tr>
<tr><td>CC DOWN</td><td></td><td>Pin ⑧ of CN006 on SV-35 board</td><td rowspan="2">It is connected to cassette compartment down detection (CC DOWN) switch.
When cassette compartment comes down, Pins ⑧ and ⑦ are short-circuited.
When cassette compartment comes up, connection between Pins ⑧ and ⑦ open.</td></tr>
<tr><td>$\overline{\text{M OUT 0}}$ (COM)</td><td>I</td><td>Pin ⑦ of CN006 on SV-35 board</td></tr>
<tr><td>END SENS</td><td>O</td><td>Pin ⑨ of CN006 on SV-35 board</td><td>Normally : "L" ("H" pulse is output in tape end or cassette unloaded)</td></tr>
<tr><td>13/10</td><td>I</td><td>Pin ⑩ of CN006 on SV-35 board</td><td>Not used</td></tr>
<tr><td>MP HG</td><td>I</td><td>Pin ⑫ of CN006 on SV-35 board</td><td>"H" pulse (20 msec) is output when normal MP tape is used.</td></tr>
<tr><td>TOP END LED</td><td>I</td><td>Pin ⑬ of CN006 on SV-35 board</td><td>"L" pulse (approx. 1 Vp-p) (pulse period is changed from 12 to 170 msec according to operation mode.)</td></tr>
<tr><td>TOP SENS</td><td>I</td><td>Pin ⑭ of CN006 on SV-35 board</td><td>Normally: "L" ("H" pulse is output in tape top or cassette unloaded)</td></tr>
<tr><td>ME/$\overline{\text{MP}}$</td><td>O</td><td>Pin ⑮ of CN006 on SV-35 board</td><td>"L" in MP tape ("H" pulse (20 msec) in cassette unloaded)</td></tr>
<tr><td>REC PROOF</td><td>I</td><td>Pin ⑰ of CN006 on SV-35 board</td><td>"L" when recording possible cassette is loaded
"H" pulse (20 msec) is output, when recording inhibiting cassette is loaded.</td></tr>
<tr><td>T REEL FG</td><td>I</td><td>Pin ⑱ of CN006 on SV-35 board</td><td>Pulse (Approx. 2.5 Vp-p) that is generated by T-reel rotation, in REC /PB (SP) mode, it is approx. 1 sec period.</td></tr>
</table>

3-10. TIMER/TUNER CONTROL — TIMER/TUNER PERIPHERAL CIRCUIT INTERFACE

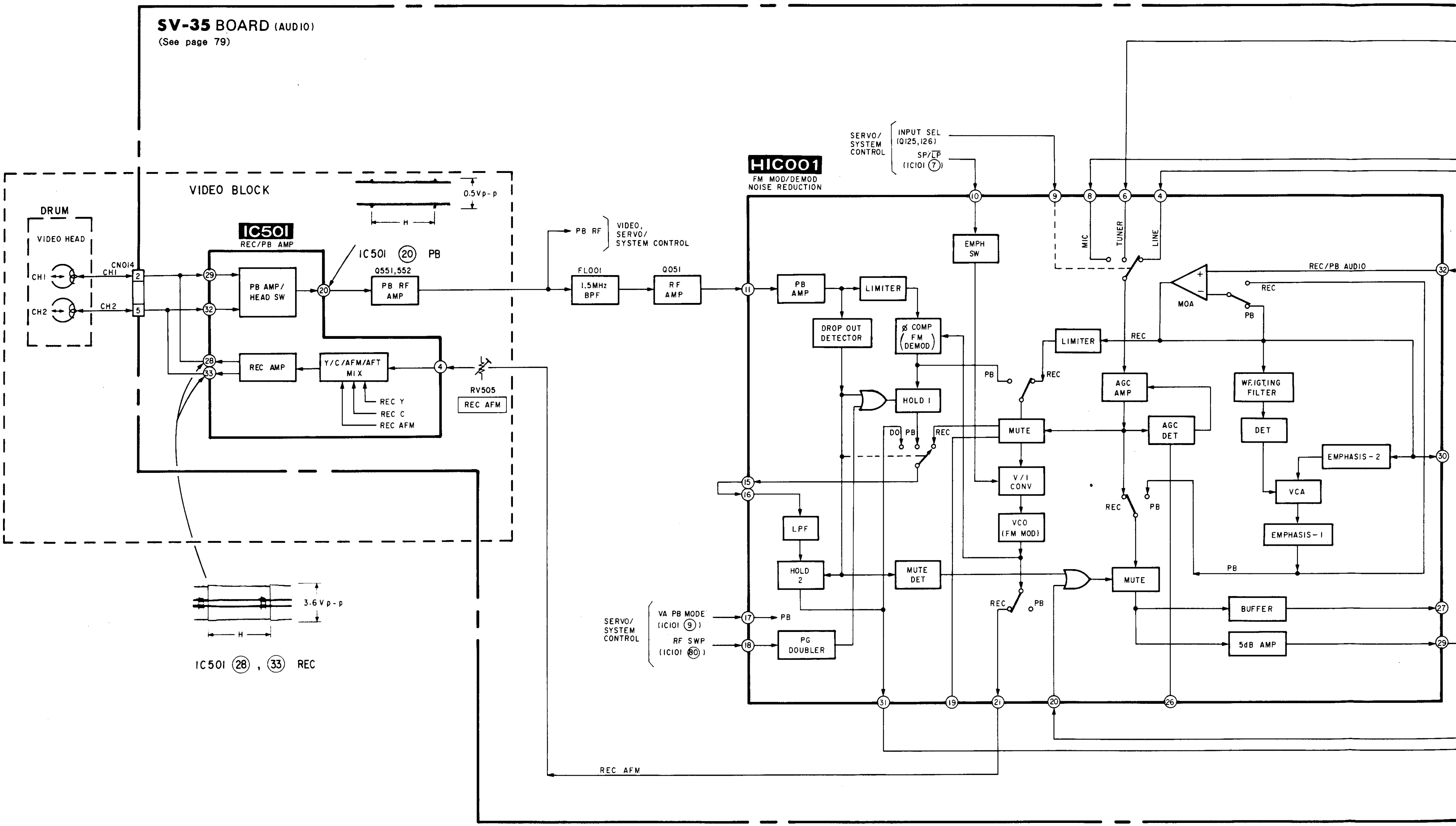
Signal	I/O	Pin No.	I/O Level
INT ($\overline{\text{V SYNC}}$)	I	Pin ㉙ of IC301 on TT-20 board	1V period “L” pulse in LCD is ON (Other : “L”) (not used)
$\overline{\text{RST}}$	I	Pin ㉜ of IC301 on TT-20 board	Normally : “H” (Reset : “L”)
AD 0 ($\overline{\text{TIMER KEY}}$)	I	Pin ㉟ of IC301 on TT-20 board	Normally : 5V (Input voltage is changed as follows according to button.) CLOCK SET (SW UNIT) : 3V, + (SW UNIT) : 2V, NEXT (SW UNIT) : 1V, SLEEP (SW UNIT) : 0V
AD 1 (LCD KEY)	I	Pin ㊱ of IC301 on TT-20 board	Normally : 5V (Input voltage is changed as follows according to button.) COUNTER RESET (S301 on KB-7 board) : 4V, DATA SCREEN ON/OFF (S302 on KB-7 board) : 3V, LCD ON/OFF (S901 on RG-5 board) : 1V, INDICATOR (S301) : 0V
AD 2 ($\overline{\text{VHF}}$/UHF)	I	Pin ㊲ of IC301 on TT-20 board	5V when VHF/UHF switch (S601 on SV-35 board) is set to VHF position, 4V when it is set to UHF position.
AD 3	I	Pin ㊳ of IC301 on TT-20 board	Normally : 5V. Input voltage should be change as follows according to the test mode setting. 32 kHz CHECK (TP304-TP303) : 4V, X120 (TP301-TP303) : 3V, TT CHECK (TP302-TP303) : 2V
+ ($\overline{\text{+KEY}}$)	I	Pin ㊴ of IC301 on TT-20 board	Normally : “H” (“L” when CHANNEL + button (S003 on KB-6 board) is pressed.)
− ($\overline{\text{−KEY}}$)	I	Pin ㊵ of IC301 on TT-20 board	Normally : “H” (“L” when CHANNEL − button (S002 on KB-6 board) is pressed.
$\overline{\text{COSMO RES IN}}$	I	Pin ㊶ of IC301 on TT-20 board	Normally : “H” (“L” when resetting the system control microcomputer for power-failure detection)
$\overline{\text{COSMO CS}}$	O	Pin ㊷ of IC301 on TT-20 board	“L” pulse
$\overline{\text{SCLK}}$	O	Pin ㊹ of IC301 on TT-20 board	“L” pulse train
SO	O	Pin ㊺ of IC301 on TT-20 board	“H” pulse train
SI	I	Pin ㊻ of IC301 on TT-20 board	“L” pulse train
$\overline{\text{TIMER SET KEY}}$	I	Pin ㊼ of IC301 on TT-20 board	Normally : “H” (“L” when TIMER SET button (SW UNIT) is pressed.)
$\overline{\text{TIMER REC KEY}}$	I	Pin ㊽ of IC301 on TT-20 board	Normally : “H” (“L” when TIMER REC ON/OFF button (SW UNIT) is pressed.)
$\overline{\text{TT WP IN}}$	I	Pin ㊾ of IC301 on TT-20 board	Normally : “H” (WAKE UP signal input from system control microcomputer IC101 on SV-35 board. “L” pulse is input at the transition of power off from on.)
LCD ON	I	Pin (51) of IC301 on TT-20 board	LCD ON : “H”, LCD OFF : “L”
DARK/$\overline{\text{BRIGHT}}$	O	Pin (52) of IC301 on TT-20 board	Not used
TUNER ON	O	Pin (53) of IC301 on TT-20 board	“H” when INPUT SELECT switch (S101 on SV-35 board) is set to TV position. Other : “L”

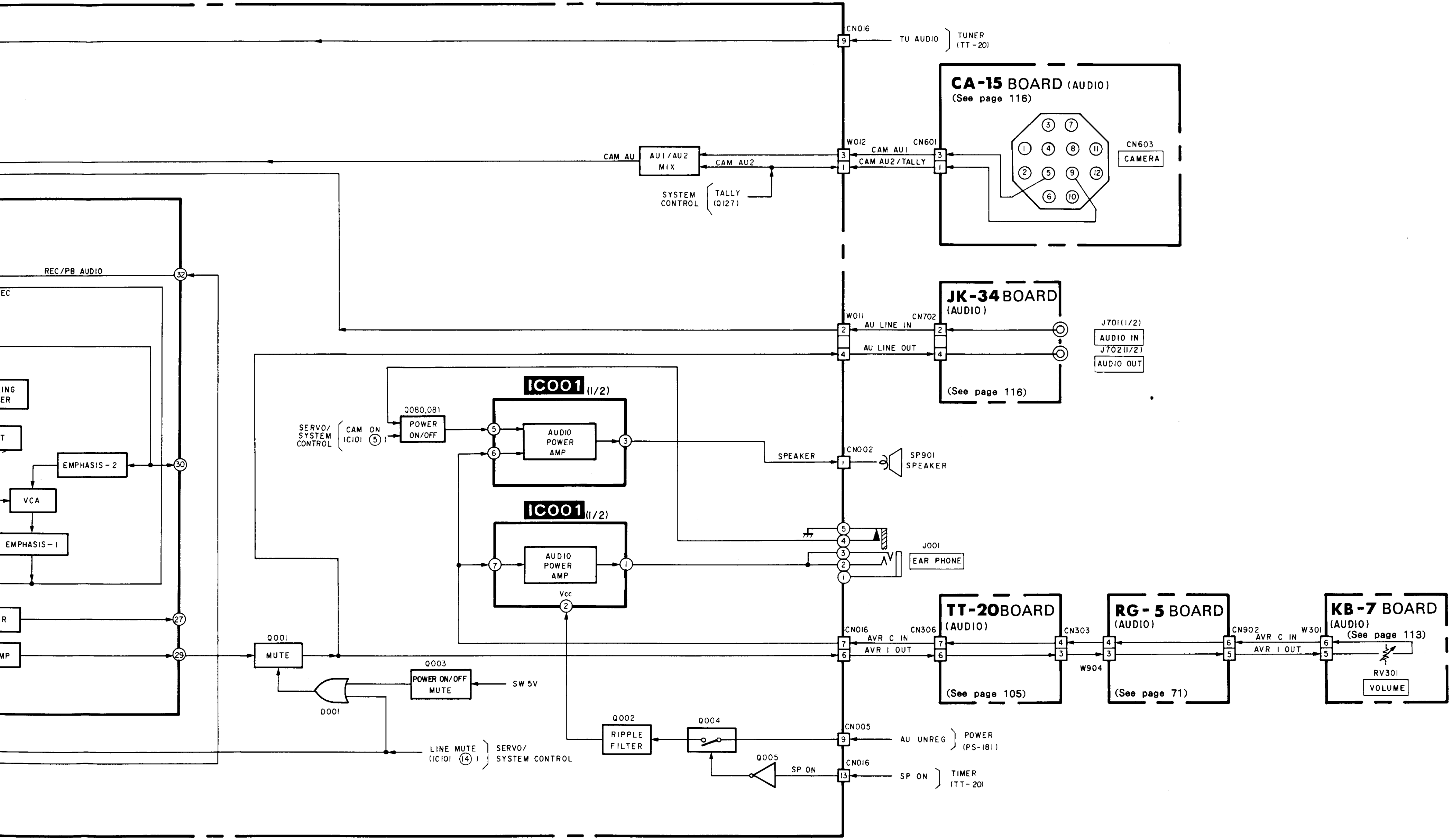
Signal	I/O	Pin No.	I/O Level
$\overline{\mathrm{WP\ COSMO}}$	O	Pin (54) of IC301 on TT-20 board	Normally : "H" (WAKE UP signal output to system control microcomputer. "L" pulse is output when reservation confirming or timer recording.)
LI BATT DWN	I	Pin (55) of IC301 on TT-20 board	Normally : "L" (When the voltage of lithium battery decreases, it is "H".)
AFT UP	I	Pin (56) of IC301 on TT-20 board	"L" when receives broadcasting signal correctly. When reception frequency is shifting to higher frequency, it becomes "H". "L" when tuner is OFF.
AFT DWN	I	Pin (57) of IC301 on TT-20 board	"L" when receives broadcasting signal correctly. When reception frequency is shifting to lower frequency, it becomes "H". "L" when tuner is OFF.
$\overline{\mathrm{V\ DET}}$	I	Pin (58) of IC301 on TT-20 board	"L" when receives broadcasting signal, and others in "H". "L" when tuner is OFF.
16 kHz OUT	O	Pin (59) of IC301 on TT-20 board	Normally : "H". (Divided by two output of clock for the timer when checking the 32 kHz in the test mode.)
$\overline{\mathrm{VC}}$ PWM	O	Pin (60) of IC301 on TT-20 board	250 μsec period PWM signal (For tuning voltage generation), "H" when tuner is OFF.
A MUTE	O	Pin (63) of IC301 on TT-20 board	Normally : "L" ("H" in channel selection), "H" when tuner is OFF
$\overline{\mathrm{BV}}$	O	Pin (64) of IC301 on TT-20 board	"L" when VHF is received, and others in "H"
$\overline{\mathrm{BS}}$	O	Pin (65) of IC301 on TT-20 board	"L" when VHF low band is received, and others in "H"
$\overline{\mathrm{BU}}$	O	Pin (66) of IC301 on TT-20 board	"L" when UHF is received, and others in "H"
$\overline{\mathrm{T\ REC}}$	O	Pin (67) of IC301 on TT-20 board	Normally : "H" ("L" when timer recording is ON.) (Output for lighting the LED.)
SP ON	O	Pin (68) of IC301 on TT-20 board	Normally : "H" ("L" when set speaker/earphone output to OFF)
CRTC STB	O	Pin (69) of IC301 on TT-20 board	LCD ON : "H" pulse train ("L" in LCD OFF)
IND ON/OFF	O	Pin (70) of IC301 on TT-20 board	Normally : "L" ("H" when tuning display is turned to ON with S301, etc.)
IND0~IND7	O	Pins (76) to (80) and ① to ③ of IC301 on TT-20 board	8-bit data output for tuner tuning display ("L" in tuner OFF)

3-11. TUNER BLOCK DIAGRAM

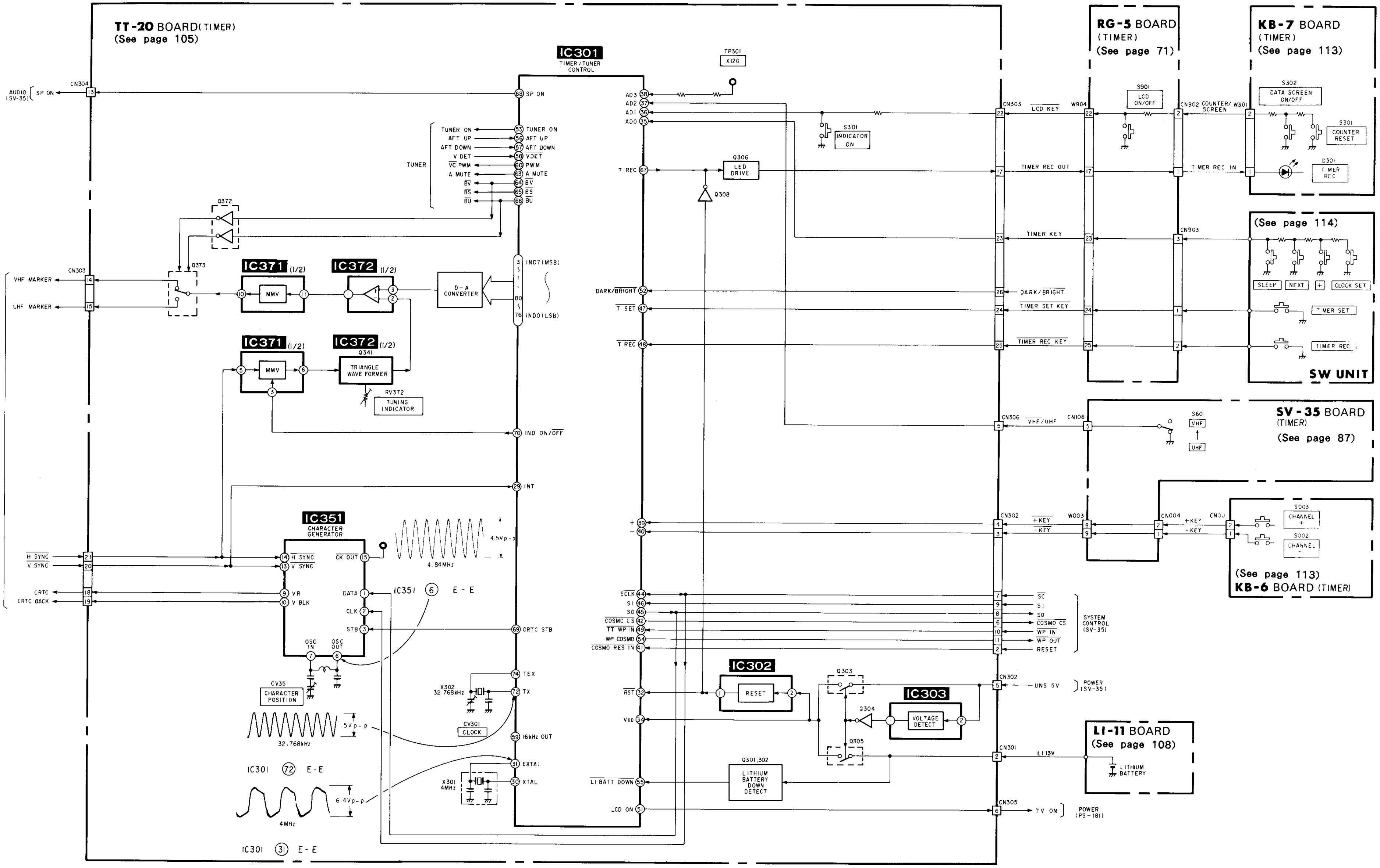

TT-20 BOARD (TUNER)
(See page 105)
J101
EXT ANTENNA
TU101 VHF/UHF TUNER
ANT
IF
BU AGC TU BV BS
Q111
Q110
Q109
Q101
PRE AMP
SWF101
SAW FILTER
IC101
VIF/SIF
VIF AMP
VIDEO DET
VIDEO AMP
T101 LLD
RF AGC
IF AGC DET
AFT DET
AGC FILTER
RV101
RF AGC
T102 AFT
LIMITER
FM DET
BUFFER
IC102
AFT UP/DOWN DETECT
5V
3.2V
1.8V
UK
BG
Q203
EQ SWITCH
Q114
BUFFER
CF102
SOUND TRAP
Q204
EQ
Q120,121
SOUND TRAP
Q122,102
EQ
CN306
TU VIDEO OUT
VIDEO (SV-35)
Q202
5.5MHz KILLER
CF101
5.5MHz BPF
Q201
6MHz KILLER
CF201
6MHz BPF
Q103,104
SYNC DET
DE-EMPHASIS
Q107
MUTE
CN306
TU AUDIO OUT
AUDIO (SV-35)
V DET
A MUTE
AFT UP
AFT DWN
TIMER
VC PWM
BS
BV
BU
TU ON
Q112
LPF
Q113
D-A CONVERTOR
+30V (CN305①)
S201
TUNER 5V
E
UB
Q119
5.5MHz KILLER
CF103
5.5MHz CF
Q115
Q118
6MHz KILLER
CF202
6MHz CF
Q116
Q105 Q106
TUNER 5V
SW 5V (CN306⑪)

3-12. AUDIO BLOCK DIAGRAM

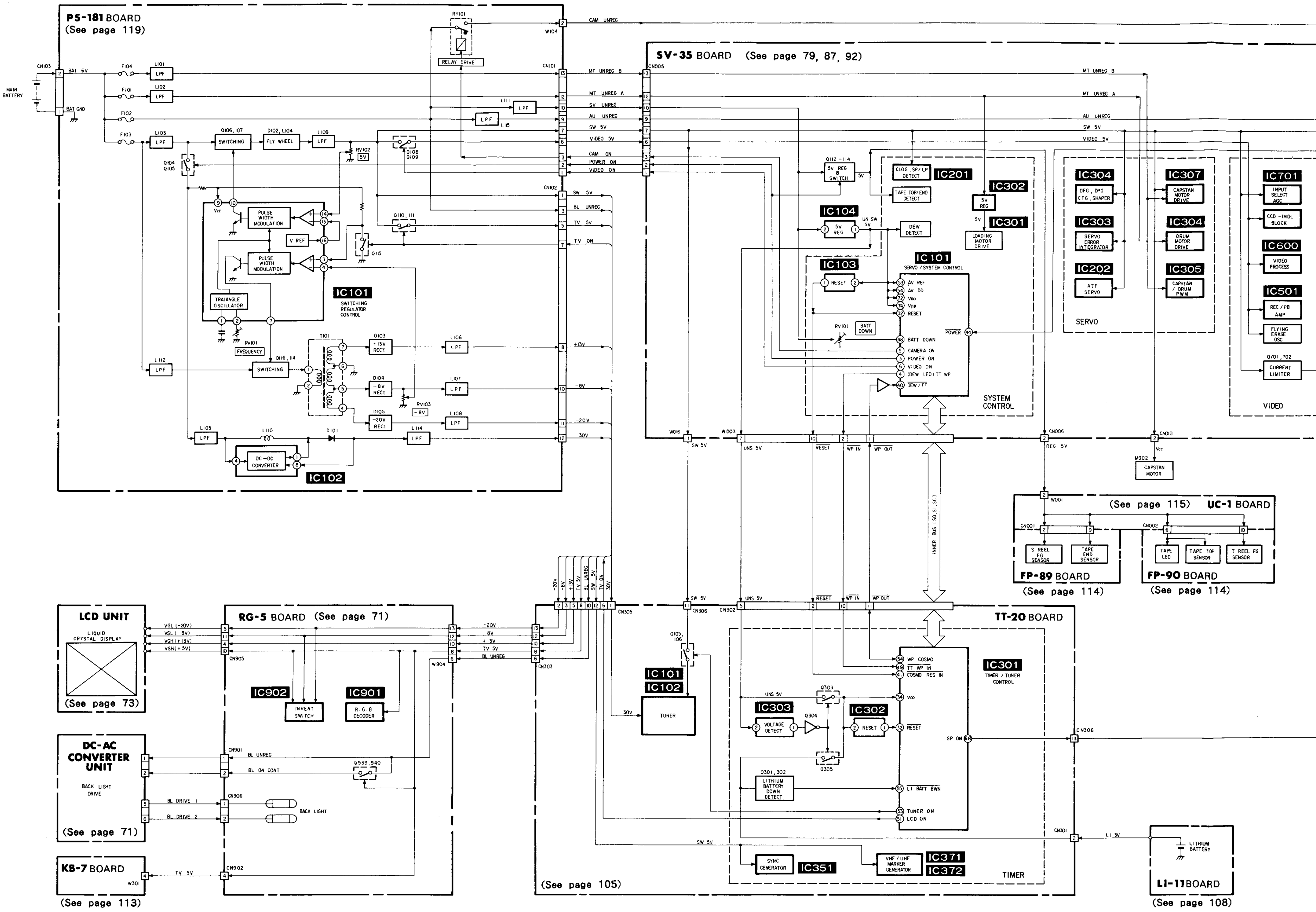

SV-35 BOARD (AUDIO)
(See page 79)
VIDEO BLOCK
DRUM
VIDEO HEAD
CH1
CH2
CN014
IC501
REC/PB AMP
PB AMP/ HEAD SW
REC AMP
Y/C/AFM/AFT MIX
REC Y
REC C
REC AFM
IC501 ⑳ PB
0.5Vp-p
H
Q551,552
PB RF AMP
RV505
REC AFM
PB RF
VIDEO, SERVO/ SYSTEM CONTROL
FL001
1.5MHz BPF
Q051
RF AMP
3.6Vp-p
IC501 ㉘ , ㉝ REC
SERVO/ SYSTEM CONTROL
INPUT SEL (Q125,126)
SP/LP (IC101 ⑦)
HIC001
FM MOD/DEMOD NOISE REDUCTION
EMPH SW
MIC
TUNER
LINE
REC/PB AUDIO
REC
PB
MOA
PB AMP
LIMITER
DROP OUT DETECTOR
ø COMP (FM DEMOD)
HOLD 1
LIMITER
AGC AMP
AGC DET
WEIGHTING FILTER
DET
MUTE
DO
V/I CONV
VCO (FM MOD)
EMPHASIS-2
VCA
EMPHASIS-1
LPF
HOLD 2
MUTE DET
MUTE
BUFFER
5dB AMP
VA PB MODE (IC101 ⑨)
RF SWP (IC101 ㊿)
PG DOUBLER
REC AFM

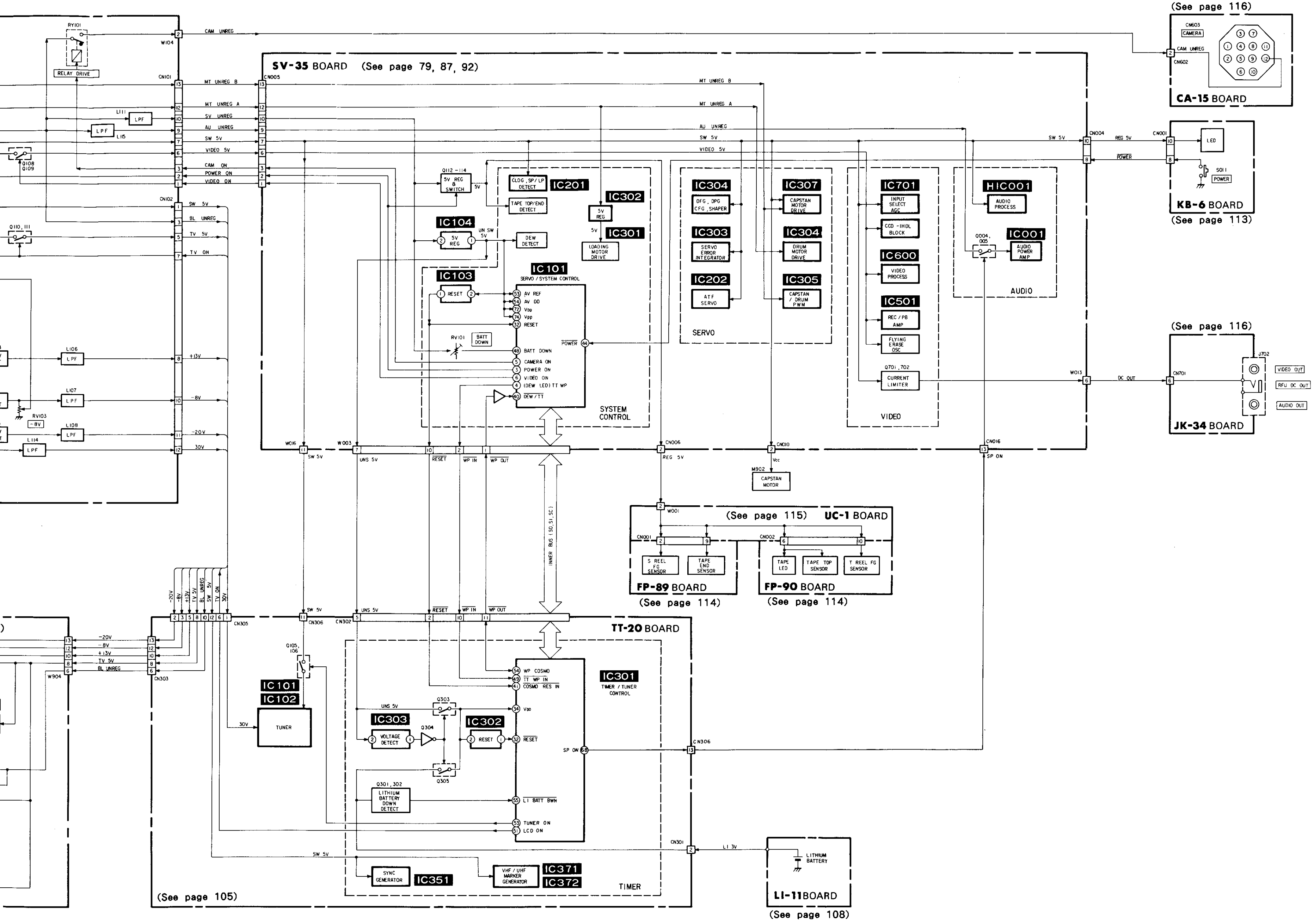

CN016
TU AUDIO
TUNER (TT-20)
CA-15 BOARD (AUDIO)
(See page 116)
CN603
CAMERA
W012
CN601
CAM AU1
CAM AU2/TALLY
CAM AU
AU1/AU2 MIX
CAM AU2
SYSTEM CONTROL
TALLY (Q127)
REC/PB AUDIO
JK-34 BOARD (AUDIO)
W011
CN702
AU LINE IN
AU LINE OUT
J701(1/2)
AUDIO IN
J702(1/2)
AUDIO OUT
(See page 116)
IC001 (1/2)
Q080,081
POWER ON/OFF
SERVO/SYSTEM CONTROL
CAM ON (IC101 ⑤)
AUDIO POWER AMP
SPEAKER
CN002
SP901 SPEAKER
EMPHASIS-2
VCA
EMPHASIS-1
IC001 (1/2)
AUDIO POWER AMP
Vcc
J001
EAR PHONE
TT-20 BOARD (AUDIO)
CN306
CN303
(See page 105)
RG-5 BOARD (AUDIO)
W904
(See page 71)
KB-7 BOARD (AUDIO)
(See page 113)
CN902
W301
AVR C IN
AVR I OUT
RV301
VOLUME
Q001
MUTE
Q003
POWER ON/OFF MUTE
SW 5V
D001
Q002
RIPPLE FILTER
Q004
Q005
CN005
AU UNREG
POWER (PS-181)
SP ON
TIMER (TT-20)
LINE MUTE (IC101 ⑭)
SERVO/SYSTEM CONTROL

3-13. TIMER BLOCK DIAGRAM


TT-20 BOARD (TIMER)
(See page 105)
IC301
TIMER/TUNER CONTROL
TP301
X120
CN304
AUDIO (SV-35) SP ON
SP ON
TUNER
TUNER ON
AFT UP
AFT DOWN
V DET
VC PWM
A MUTE
BV
BS
BU
PWM
AD3
AD2
AD1
AD0
T REC
Q306
LED DRIVE
Q308
Q372
Q373
CN303
VHF MARKER
UHF MARKER
IC371 (1/2)
MMV
IC372 (1/2)
D-A CONVERTER
IND7 (MSB)
IND0 (LSB)
IC371 (1/2)
IC372 (1/2)
Q341
TRIANGLE WAVE FORMER
RV372
TUNING INDICATOR
IND ON/OFF
INT
LCD (RG-5)
DARK/BRIGHT
T SET
T REC
IC351
CHARACTER GENERATOR
H SYNC
V SYNC
CK OUT
4.5Vp-p
4.84MHz
CRTC
CRTC BACK
VR
V BLK
DATA
CLK
STB
IC351 ⑥ E-E
OSC IN
OSC OUT
CV351
CHARACTER POSITION
5Vp-p
32.768kHz
IC301 ㉒ E-E
6.4Vp-p
4MHz
IC301 ㉛ E-E
CRTC STB
TEX
TX
X302 32.768kHz
CV301 CLOCK
16kHz OUT
EXTAL
XTAL
X301 4MHz
+
−
SCLK
SI
SO
COSMO CS
TT WP IN
WP COSMO
COSMO RES IN
IC302
RESET
RST
VDD
Q303
Q304
Q305
IC303
VOLTAGE DETECT
Q301, 302
LITHIUM BATTERY DOWN DETECT
LI BATT DOWN
LCD ON
S301
INDICATOR ON
LCD KEY
TIMER REC OUT
TIMER KEY
DARK/BRIGHT
TIMER SET KEY
TIMER REC KEY
CN306
VHF/UHF
CN106
CN302
+KEY
−KEY
W003
SC
SI
SO
COSMO CS
WP IN
WP OUT
RESET
SYSTEM CONTROL (SV-35)
UNS 5V
POWER (SV-35)
CN301
LI 13V
CN305
TV ON
POWER (PS-181)
RG-5 BOARD (TIMER)
(See page 71)
W904
S901
LCD ON/OFF
CN902
COUNTER/SCREEN
W301
TIMER REC IN
CN903
KB-7 BOARD (TIMER)
(See page 113)
S302
DATA SCREEN ON/OFF
S301
COUNTER RESET
D301
TIMER REC
(See page 114)
SLEEP
NEXT
+
CLOCK SET
TIMER SET
TIMER REC
SW UNIT
SV-35 BOARD (TIMER)
(See page 87)
S601
VHF
UHF
CN004
+KEY
−KEY
CN001
S003
CHANNEL +
S002
CHANNEL −
(See page 113)
KB-6 BOARD (TIMER)
LI-11 BOARD
(See page 108)
LITHIUM BATTERY

3-14. POWER BLOCK DIAGRAM

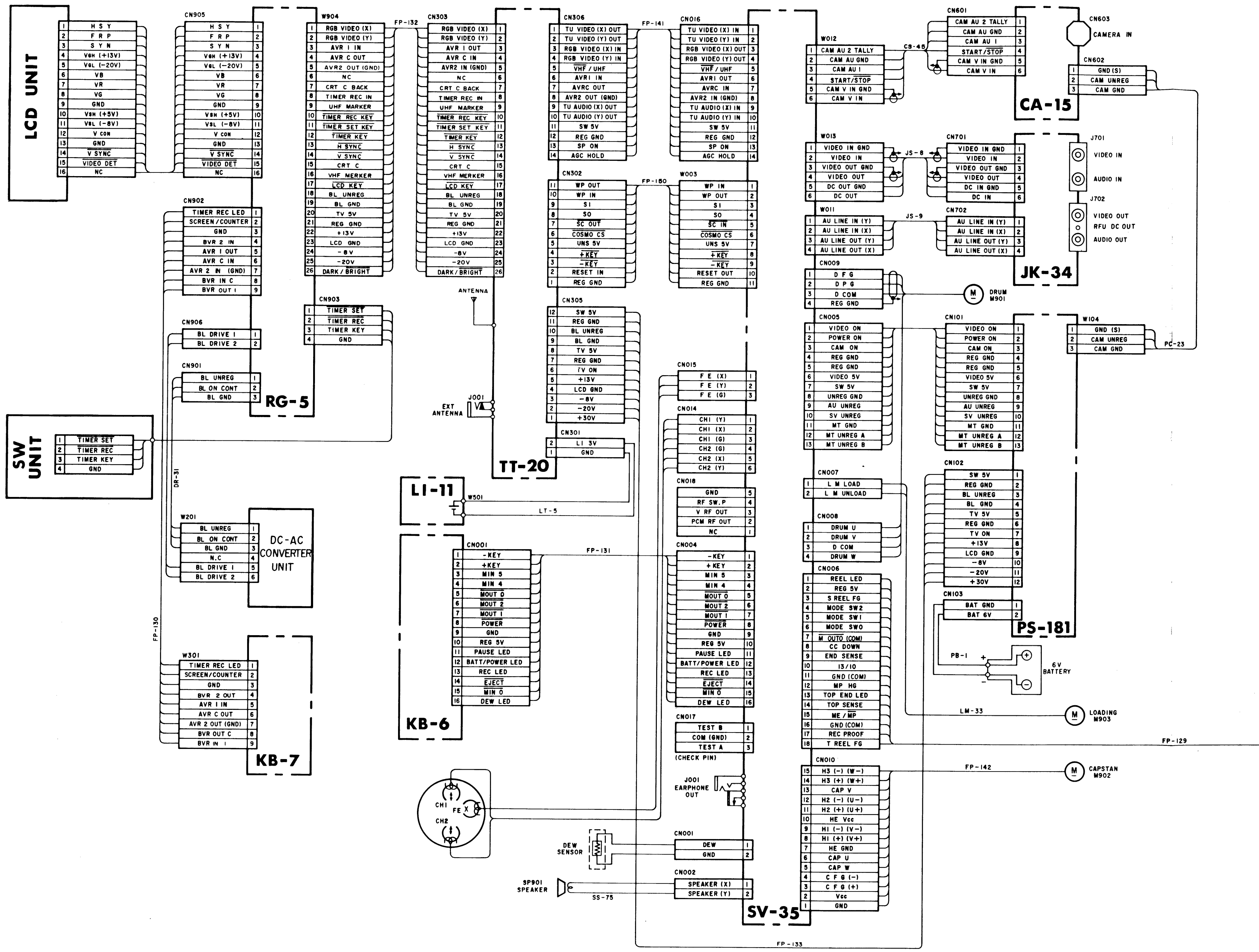

PS-181 BOARD (See page 119)
MAIN BATTERY
CN103
BAT 6V
BAT GND
F104
F101
F102
F103
L101
L102
L103
LPF
Q104, Q105
Q106, 107 SWITCHING
D102, L104 FLY WHEEL
L109
RV102 5V
Q108, Q109
RY101
RELAY DRIVE
W104
CN101
L111
L115
CN102
Q110, 111
Q115
PULSE WIDTH MODULATION
V REF
TRAIANGLE OSCILLATOR
IC101 SWITCHING REGULATOR CONTROL
RV101 FREQUENCY
L112
Q116, 114 SWITCHING
T101
D103 +13V RECT
D104 -8V RECT
D105 -20V RECT
RV103 -8V
L106
L107
L108
L105
L110
D101
L114
DC-DC CONVERTER
IC102
CAM UNREG
MT UNREG B
MT UNREG A
SV UNREG
AU UNREG
SW 5V
VIDEO 5V
CAM ON
POWER ON
VIDEO ON
BL UNREG
TV 5V
TV ON
+13V
-8V
-20V
30V
SV-35 BOARD (See page 79, 87, 92)
CN005
Q112 - 114 5V REG & SWITCH
IC104 5V REG
UN SW 5V
CLOG, SP/LP DETECT
IC201
TAPE TOP/END DETECT
DEW DETECT
IC302 5V REG
IC301 LOADING MOTOR DRIVE
IC103 RESET
IC101 SERVO / SYSTEM CONTROL
AV REF
AV DD
VDD
VPP
RESET
POWER
RV101
BATT DOWN
CAMERA ON
POWER ON
VIDEO ON
(DEW LED) TT WP
DEW / TT
SYSTEM CONTROL
IC304 DFG, DPG CFG, SHAPER
IC303 SERVO ERROR INTEGRATOR
IC202 ATF SERVO
IC307 CAPSTAN MOTOR DRIVE
IC304 DRUM MOTOR DRIVE
IC305 CAPSTAN / DRUM PWM
SERVO
IC701 INPUT SELECT AGC
CCD - 1HDL BLOCK
IC600 VIDEO PROCESS
IC501 REC / PB AMP
FLYING ERASE OSC
Q701, 702 CURRENT LIMITER
VIDEO
W016
W003
SW 5V
UNS 5V
RESET
WP IN
WP OUT
INNER BUS (S0, S1, SC)
CN006
REG 5V
CN010
Vcc
M902 CAPSTAN MOTOR
W001
(See page 115) UC-1 BOARD
CN001
CN002
S REEL FG SENSOR
TAPE END SENSOR
TAPE LED
TAPE TOP SENSOR
T REEL FG SENSOR
FP-89 BOARD (See page 114)
FP-90 BOARD (See page 114)
LCD UNIT
LIQUID CRYSTAL DISPLAY
(See page 73)
VGL (-20V)
VSL (-8V)
VGH (+13V)
VSH (+5V)
RG-5 BOARD (See page 71)
CN905
W904
IC902 INVERT SWITCH
IC901 R. G. B DECODER
CN901
BL UNREG
BL ON CONT
Q939, 940
CN906
BL DRIVE 1
BL DRIVE 2
BACK LIGHT
CN902
DC-AC CONVERTER UNIT
BACK LIGHT DRIVE
(See page 71)
KB-7 BOARD
W301
TV 5V
(See page 113)
CN305
CN303
CN306
CN302
TT-20 BOARD
Q105, 106
IC101
IC102
TUNER
UNS 5V
IC303 VOLTAGE DETECT
Q303
Q304
Q305
IC302 RESET
Q301, 302 LITHIUM BATTERY DOWN DETECT
IC301 TIMER / TUNER CONTROL
WP COSMO
TT WP IN
COSMO RES IN
VDD
RESET
SP ON
LI BATT DWN
TUNER ON
LCD ON
CN306
CN301
LI 3V
SYNC GENERATOR
IC351
VHF / UHF MARKER GENERATOR
IC371
IC372
TIMER
(See page 105)
LITHIUM BATTERY
LI-11 BOARD
(See page 108)

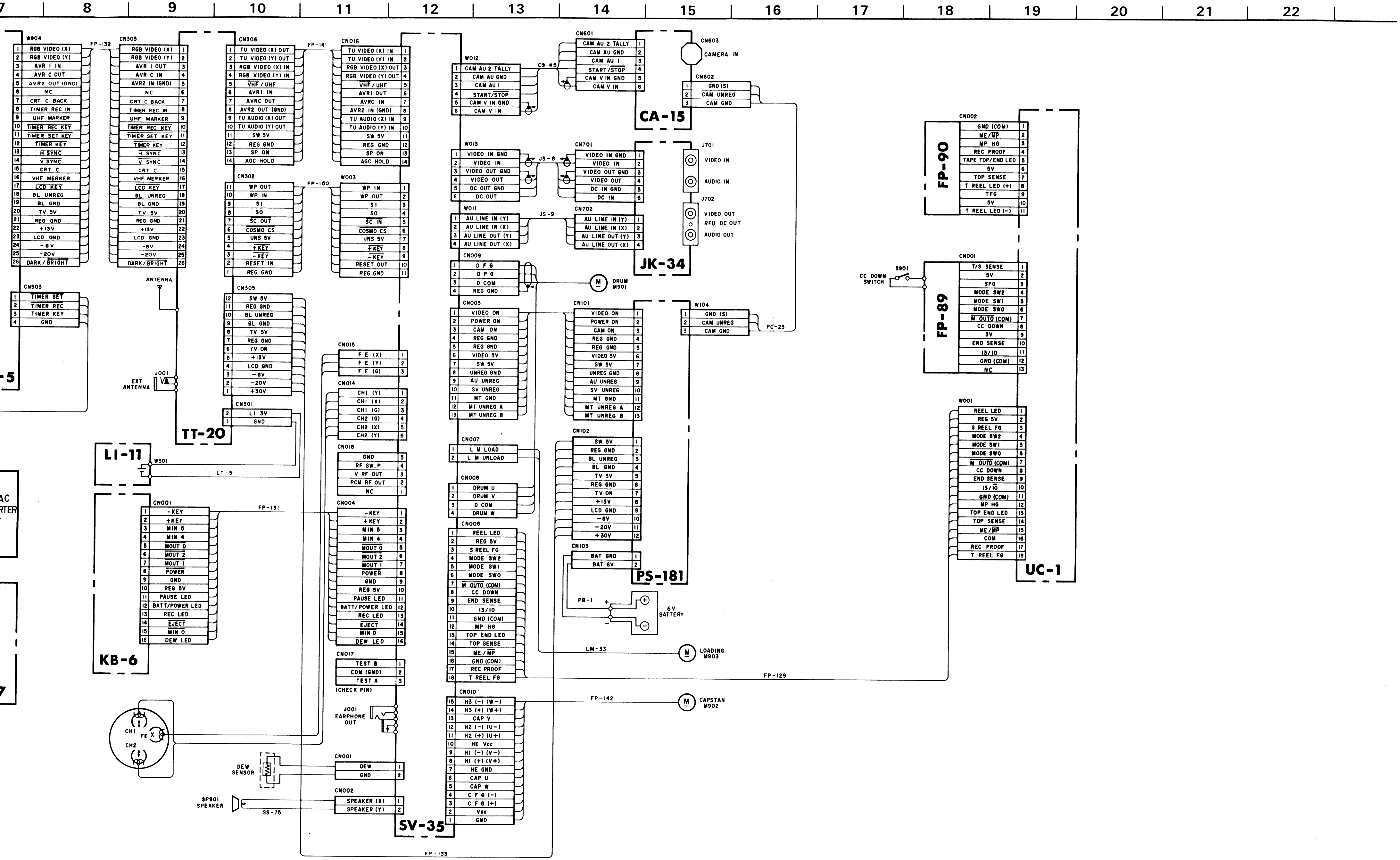

RY101
RELAY DRIVE
W104
CN101
CAM UNREG
MT UNREG B
MT UNREG A
SV UNREG
AU UNREG
SW 5V
VIDEO 5V
CAM ON
POWER ON
VIDEO ON
L111
LPF
L115
Q108
Q109
CN102
SW 5V
BL UNREG
TV 5V
TV ON
Q110, 111
L106
L107
L108
L114
RV103
-8V
+13V
-20V
30V
SV-35 BOARD (See page 79, 87, 92)
CN005
Q112 - 114
5V REG & SWITCH
CLOG, SP/LP DETECT
IC201
TAPE TOP/END DETECT
IC302
5V REG
IC301
LOADING MOTOR DRIVE
IC104
UN SW 5V
DEW DETECT
IC103
RESET
IC101
SERVO / SYSTEM CONTROL
AV REF
AV DD
VDD
VPP
RESET
RV101
BATT DOWN
BATT DOWN
CAMERA ON
POWER ON
VIDEO ON
(DEW LED) TT WP
DEW / TT
POWER
SYSTEM CONTROL
IC304
DFG, DPG CFG, SHAPER
IC303
SERVO ERROR INTEGRATOR
IC202
ATF SERVO
IC307
CAPSTAN MOTOR DRIVE
IC304
DRUM MOTOR DRIVE
IC305
CAPSTAN / DRUM PWM
SERVO
IC701
INPUT SELECT AGC
CCD - 1HDL BLOCK
IC600
VIDEO PROCESS
IC501
REC / PB AMP
FLYING ERASE OSC
Q701, 702
CURRENT LIMITER
VIDEO
HIC001
AUDIO PROCESS
Q004, 005
IC001
AUDIO POWER AMP
AUDIO
CN004
REG 5V
POWER
W013
DC OUT
W016
W003
UNS 5V
RESET
WP IN
WP OUT
CN006
REG 5V
CN010
Vcc
M902
CAPSTAN MOTOR
CN016
SP ON
INNER BUS (S0, S1, SC)
(See page 116)
CN603
CAMERA
CAM UNREG
CN602
CA-15 BOARD
CN001
LED
S011
POWER
KB-6 BOARD
(See page 113)
(See page 116)
J702
CN701
VIDEO OUT
RFU DC OUT
AUDIO OUT
JK-34 BOARD
W001
(See page 115) UC-1 BOARD
CN001
CN002
S REEL FG SENSOR
TAPE END SENSOR
TAPE LED
TAPE TOP SENSOR
T REEL FG SENSOR
FP-89 BOARD
(See page 114)
FP-90 BOARD
(See page 114)
-20V
-8V
+13V
TV 5V
BL UNREG
SW 5V
TV ON
30V
CN305
CN306
CN302
W904
CN303
TT-20 BOARD
Q105, 106
IC101
IC102
TUNER
30V
IC301
TIMER / TUNER CONTROL
WP COSMO
TT WP IN
COSMO RES IN
UNS 5V
Q303
VDD
IC303
VOLTAGE DETECT
Q304
IC302
RESET
RESET
Q305
SP ON
CN306
Q301, 302
LITHIUM BATTERY DOWN DETECT
LI BATT DWN
TUNER ON
LCD ON
CN301
LI 3V
LITHIUM BATTERY
LI-11 BOARD
(See page 108)
SW 5V
SYNC GENERATOR
IC351
VHF / UHF MARKER GENERATOR
IC371
IC372
TIMER
(See page 105)

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

A B C D E F G H I J

4-1. FRAME SCHEMATIC DIAGRAM


LCD UNIT
1 H S Y
2 F R P
3 S Y N
4 VGH (+13V)
5 VGL (-20V)
6 VB
7 VR
8 VG
9 GND
10 VSH (+5V)
11 VSL (-8V)
12 V CON
13 GND
14 V SYNC
15 VIDEO DET
16 NC
CN905
CN902
1 TIMER REC LED
2 SCREEN/COUNTER
3 GND
4 BVR 2 IN
5 AVR 1 OUT
6 AVR C IN
7 AVR 2 IN (GND)
8 BVR IN C
9 BVR OUT 1
CN906
1 BL DRIVE 1
2 BL DRIVE 2
CN901
1 BL UNREG
2 BL ON CONT
3 BL GND
RG-5
W904
1 RGB VIDEO (X)
2 RGB VIDEO (Y)
3 AVR 1 IN
4 AVR C OUT
5 AVR2 OUT (GND)
6 NC
7 CRT C BACK
8 TIMER REC IN
9 UHF MARKER
10 TIMER REC KEY
11 TIMER SET KEY
12 TIMER KEY
13 H SYNC
14 V SYNC
15 CRT C
16 VHF MERKER
17 LCD KEY
18 BL UNREG
19 BL GND
20 TV 5V
21 REG GND
22 +13V
23 LCD GND
24 -8V
25 -20V
26 DARK/BRIGHT
FP-132
CN303
1 RGB VIDEO (X)
2 RGB VIDEO (Y)
3 AVR 1 OUT
4 AVR C IN
5 AVR2 IN (GND)
6 NC
7 CRT C BACK
8 TIMER REC IN
9 UHF MARKER
10 TIMER REC KEY
11 TIMER SET KEY
12 TIMER KEY
13 H SYNC
14 V SYNC
15 CRT C
16 VHF MERKER
17 LCD KEY
18 BL UNREG
19 BL GND
20 TV 5V
21 REG GND
22 +13V
23 LCD GND
24 -8V
25 -20V
26 DARK/BRIGHT
CN903
1 TIMER SET
2 TIMER REC
3 TIMER KEY
4 GND
SW UNIT
1 TIMER SET
2 TIMER REC
3 TIMER KEY
4 GND
DR-31
W201
1 BL UNREG
2 BL ON CONT
3 BL GND
4 N.C
5 BL DRIVE 1
6 BL DRIVE 2
DC-AC CONVERTER UNIT
FP-130
W301
1 TIMER REC LED
2 SCREEN/COUNTER
3 GND
4 BVR 2 OUT
5 AVR 1 IN
6 AVR C OUT
7 AVR 2 OUT (GND)
8 BVR OUT C
9 BVR IN 1
KB-7
ANTENNA
J001
EXT ANTENNA
TT-20
CN306
1 TU VIDEO (X) OUT
2 TU VIDEO (Y) OUT
3 RGB VIDEO (X) IN
4 RGB VIDEO (Y) IN
5 VHF/UHF
6 AVR1 IN
7 AVRC OUT
8 AVR2 OUT (GND)
9 TU AUDIO (X) OUT
10 TU AUDIO (Y) OUT
11 SW 5V
12 REG GND
13 SP ON
14 AGC HOLD
FP-141
CN016
1 TU VIDEO (X) IN
2 TU VIDEO (Y) IN
3 RGB VIDEO (X) OUT
4 RGB VIDEO (Y) OUT
5 VHF/UHF
6 AVR1 OUT
7 AVRC IN
8 AVR2 IN (GND)
9 TU AUDIO (X) IN
10 TU AUDIO (Y) IN
11 SW 5V
12 REG GND
13 SP ON
14 AGC HOLD
CN302
11 WP OUT
10 WP IN
9 SI
8 SO
7 SC OUT
6 COSMO CS
5 UNS 5V
4 +KEY
3 -KEY
2 RESET IN
1 REG GND
FP-150
W003
1 WP IN
2 WP OUT
3 SI
4 SO
5 SC IN
6 COSMO CS
7 UNS 5V
8 +KEY
9 -KEY
10 RESET OUT
11 REG GND
CN305
12 SW 5V
11 REG GND
10 BL UNREG
9 BL GND
8 TV 5V
7 REG GND
6 TV ON
5 +13V
4 LCD GND
3 -8V
2 -20V
1 +30V
CN301
2 LI 3V
1 GND
LI-11
W501
LT-5
CN001
1 -KEY
2 +KEY
3 MIN 5
4 MIN 4
5 MOUT 0
6 MOUT 2
7 MOUT 1
8 POWER
9 GND
10 REG 5V
11 PAUSE LED
12 BATT/POWER LED
13 REC LED
14 EJECT
15 MIN 0
16 DEW LED
FP-131
KB-6
CN015
1 F E (X)
2 F E (Y)
3 F E (G)
CN014
1 CH1 (Y)
2 CH1 (X)
3 CH1 (G)
4 CH2 (G)
5 CH2 (X)
6 CH2 (Y)
CN018
5 GND
4 RF SW.P
3 V RF OUT
2 PCM RF OUT
1 NC
CN004
1 -KEY
2 +KEY
3 MIN 5
4 MIN 4
5 MOUT 0
6 MOUT 2
7 MOUT 1
8 POWER
9 GND
10 REG 5V
11 PAUSE LED
12 BATT/POWER LED
13 REC LED
14 EJECT
15 MIN 0
16 DEW LED
CN017
1 TEST B
2 COM (GND)
3 TEST A
(CHECK PIN)
J001
EARPHONE OUT
CH1
FE
CH2
DEW SENSOR
CN001
1 DEW
2 GND
SP901
SPEAKER
CN002
1 SPEAKER (X)
2 SPEAKER (Y)
SS-75
SV-35
FP-133
W012
1 CAM AU 2 TALLY
2 CAM AU GND
3 CAM AU 1
4 START/STOP
5 CAM V IN GND
6 CAM V IN
CS-48
CN601
1 CAM AU 2 TALLY
2 CAM AU GND
3 CAM AU 1
4 START/STOP
5 CAM V IN GND
6 CAM V IN
CN603
CAMERA IN
CN602
1 GND (S)
2 CAM UNREG
3 CAM GND
CA-15
W013
1 VIDEO IN GND
2 VIDEO IN
3 VIDEO OUT GND
4 VIDEO OUT
5 DC OUT GND
6 DC OUT
JS-8
CN701
1 VIDEO IN GND
2 VIDEO IN
3 VIDEO OUT GND
4 VIDEO OUT
5 DC IN GND
6 DC IN
J701
VIDEO IN
AUDIO IN
J702
VIDEO OUT
RFU DC OUT
AUDIO OUT
W011
1 AU LINE IN (Y)
2 AU LINE IN (X)
3 AU LINE OUT (Y)
4 AU LINE OUT (X)
JS-9
CN702
1 AU LINE IN (Y)
2 AU LINE IN (X)
3 AU LINE OUT (Y)
4 AU LINE OUT (X)
JK-34
CN009
1 D F G
2 D P G
3 D COM
4 REG GND
M DRUM M901
CN005
1 VIDEO ON
2 POWER ON
3 CAM ON
4 REG GND
5 REG GND
6 VIDEO 5V
7 SW 5V
8 UNREG GND
9 AU UNREG
10 SV UNREG
11 MT GND
12 MT UNREG A
13 MT UNREG B
CN101
1 VIDEO ON
2 POWER ON
3 CAM ON
4 REG GND
5 REG GND
6 VIDEO 5V
7 SW 5V
8 UNREG GND
9 AU UNREG
10 SV UNREG
11 MT GND
12 MT UNREG A
13 MT UNREG B
W104
1 GND (S)
2 CAM UNREG
3 CAM GND
PC-23
CN007
1 L M LOAD
2 L M UNLOAD
CN102
1 SW 5V
2 REG GND
3 BL UNREG
4 BL GND
5 TV 5V
6 REG GND
7 TV ON
8 +13V
9 LCD GND
10 -8V
11 -20V
12 +30V
CN008
1 DRUM U
2 DRUM V
3 D COM
4 DRUM W
CN103
1 BAT GND
2 BAT 6V
PS-181
PB-1
6V BATTERY
CN006
1 REEL LED
2 REG 5V
3 S REEL FG
4 MODE SW2
5 MODE SW1
6 MODE SW0
7 M QUTO (COM)
8 CC DOWN
9 END SENSE
10 13/10
11 GND (COM)
12 MP HG
13 TOP END LED
14 TOP SENSE
15 ME/MP
16 GND (COM)
17 REC PROOF
18 T REEL FG
LM-33
M LOADING M903
FP-129
CN010
15 H3 (-) (W-)
14 H3 (+) (W+)
13 CAP V
12 H2 (-) (U-)
11 H2 (+) (U+)
10 HE Vcc
9 H1 (-) (V-)
8 H1 (+) (V+)
7 HE GND
6 CAP U
5 CAP W
4 C F G (-)
3 C F G (+)
2 Vcc
1 GND
FP-142
M CAPSTAN M902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21
22
W904
1 RGB VIDEO (X)
2 RGB VIDEO (Y)
3 AVR 1 IN
4 AVR C OUT
5 AVR2 OUT (GND)
6 NC
7 CRT C BACK
8 TIMER REC IN
9 UHF MARKER
10 TIMER REC KEY
11 TIMER SET KEY
12 TIMER KEY
13 H SYNC
14 V SYNC
15 CRT C
16 VHF MERKER
17 LCD KEY
18 BL UNREG
19 BL GND
20 TV 5V
21 REG GND
22 +13V
23 LCD GND
24 -8V
25 -20V
26 DARK/BRIGHT
FP-132
CN303
RGB VIDEO (X) 1
RGB VIDEO (Y) 2
AVR 1 OUT 3
AVR C IN 4
AVR2 IN (GND) 5
NC 6
CRT C BACK 7
TIMER REC IN 8
UHF MARKER 9
TIMER REC KEY 10
TIMER SET KEY 11
TIMER KEY 12
H SYNC 13
V SYNC 14
CRT C 15
VHF MERKER 16
LCD KEY 17
BL UNREG 18
BL GND 19
TV 5V 20
REG GND 21
+13V 22
LCD GND 23
-8V 24
-20V 25
DARK/BRIGHT 26
CN903
1 TIMER SET
2 TIMER REC
3 TIMER KEY
4 GND
-5
ANTENNA
EXT ANTENNA
J001
TT-20
CN306
1 TU VIDEO (X) OUT
2 TU VIDEO (Y) OUT
3 RGB VIDEO (X) IN
4 RGB VIDEO (Y) IN
5 VHF/UHF
6 AVR1 IN
7 AVRC OUT
8 AVR2 OUT (GND)
9 TU AUDIO (X) OUT
10 TU AUDIO (Y) OUT
11 SW 5V
12 REG GND
13 SP ON
14 AGC HOLD
FP-141
CN016
TU VIDEO (X) IN 1
TU VIDEO (Y) IN 2
RGB VIDEO (X) OUT 3
RGB VIDEO (Y) OUT 4
VHF/UHF 5
AVR1 OUT 6
AVRC IN 7
AVR2 IN (GND) 8
TU AUDIO (X) IN 9
TU AUDIO (Y) IN 10
SW 5V 11
REG GND 12
SP ON 13
AGC HOLD 14
CN302
11 WP OUT
10 WP IN
9 SI
8 SO
7 SC OUT
6 COSMO CS
5 UNS 5V
4 +KEY
3 -KEY
2 RESET IN
1 REG GND
FP-180
W003
WP IN 1
WP OUT 2
SI 3
SO 4
SC IN 5
COSMO CS 6
UNS 5V 7
+KEY 8
-KEY 9
RESET OUT 10
REG GND 11
CN305
12 SW 5V
11 REG GND
10 BL UNREG
9 BL GND
8 TV 5V
7 REG GND
6 TV ON
5 +13V
4 LCD GND
3 -8V
2 -20V
1 +30V
CN301
1 L1 3V
2 GND
LI-11
W501
LT-5
AC
RTER
KB-6
CN001
1 -KEY
2 +KEY
3 MIN 5
4 MIN 4
5 MOUT 0
6 MOUT 2
7 MOUT 1
8 POWER
9 GND
10 REG 5V
11 PAUSE LED
12 BATT/POWER LED
13 REC LED
14 EJECT
15 MIN 0
16 DEW LED
FP-131
CN015
F E (X) 1
F E (Y) 2
F E (G) 3
CN014
CH1 (Y) 1
CH1 (X) 2
CH1 (G) 3
CH2 (G) 4
CH2 (X) 5
CH2 (Y) 6
CN018
GND 5
RF SW.P 4
V RF OUT 3
PCM RF OUT 2
NC 1
CN004
-KEY 1
+KEY 2
MIN 5 3
MIN 4 4
MOUT 0 5
MOUT 2 6
MOUT 1 7
POWER 8
GND 9
REG 5V 10
PAUSE LED 11
BATT/POWER LED 12
REC LED 13
EJECT 14
MIN 0 15
DEW LED 16
CN017
TEST B 1
COM (GND) 2
TEST A 3
(CHECK PIN)
J001
EARPHONE OUT
CH1
FE
X
CH2
DEW SENSOR
CN001
DEW 1
GND 2
SP901
SPEAKER
SS-75
CN002
SPEAKER (X) 1
SPEAKER (Y) 2
SV-35
FP-133
W012
1 CAM AU 2 TALLY
2 CAM AU GND
3 CAM AU 1
4 START/STOP
5 CAM V IN GND
6 CAM V IN
CS-46
CN601
CAM AU 2 TALLY 1
CAM AU GND 2
CAM AU 1 3
START/STOP 4
CAM V IN GND 5
CAM V IN 6
CN603
CAMERA IN
CN602
1 GND (S)
2 CAM UNREG
3 CAM GND
CA-15
W013
1 VIDEO IN GND
2 VIDEO IN
3 VIDEO OUT GND
4 VIDEO OUT
5 DC OUT GND
6 DC OUT
JS-8
CN701
VIDEO IN GND 1
VIDEO IN 2
VIDEO OUT GND 3
VIDEO OUT 4
DC IN GND 5
DC IN 6
J701
VIDEO IN
AUDIO IN
J702
VIDEO OUT
RFU DC OUT
AUDIO OUT
W011
1 AU LINE IN (Y)
2 AU LINE IN (X)
3 AU LINE OUT (Y)
4 AU LINE OUT (X)
JS-9
CN702
AU LINE IN (Y) 1
AU LINE IN (X) 2
AU LINE OUT (Y) 3
AU LINE OUT (X) 4
JK-34
CN009
1 D F G
2 D P G
3 D COM
4 REG GND
DRUM M901
CN005
1 VIDEO ON
2 POWER ON
3 CAM ON
4 REG GND
5 REG GND
6 VIDEO 5V
7 SW 5V
8 UNREG GND
9 AU UNREG
10 SV UNREG
11 MT GND
12 MT UNREG A
13 MT UNREG B
CN101
VIDEO ON 1
POWER ON 2
CAM ON 3
REG GND 4
REG GND 5
VIDEO 5V 6
SW 5V 7
UNREG GND 8
AU UNREG 9
SV UNREG 10
MT GND 11
MT UNREG A 12
MT UNREG B 13
W104
1 GND (S)
2 CAM UNREG
3 CAM GND
PC-23
CN007
1 L M LOAD
2 L M UNLOAD
CN102
SW 5V 1
REG GND 2
BL UNREG 3
BL GND 4
TV 5V 5
REG GND 6
TV ON 7
+13V 8
LCD GND 9
-8V 10
-20V 11
+30V 12
CN008
1 DRUM U
2 DRUM V
3 D COM
4 DRUM W
CN103
BAT GND 1
BAT 6V 2
PS-181
PB-1
6V BATTERY
CN006
1 REEL LED
2 REG 5V
3 S REEL FG
4 MODE SW2
5 MODE SW1
6 MODE SW0
7 M OUTO (COM)
8 END SENSE
9 CC DOWN
10 13/10
11 GND (COM)
12 MP HG
13 TOP END LED
14 TOP SENSE
15 ME/MP
16 GND (COM)
17 REC PROOF
18 T REEL FG
LM-33
LOADING M903
FP-129
CN010
15 H3 (-) (W-)
14 H3 (+) (W+)
13 CAP V
12 H2 (-) (U-)
11 H2 (+) (U+)
10 HE Vcc
9 H1 (-) (V-)
8 H1 (+) (V+)
7 HE GND
6 CAP U
5 CAP W
4 C F G (-)
3 C F G (+)
2 Vcc
1 GND
FP-142
CAPSTAN M902
FP-90
CN002
GND (COM) 1
ME/MP 2
MP HG 3
REC PROOF 4
TAPE TOP/END LED 5
5V 6
TOP SENSE 7
T REEL LED (+) 8
TFG 9
5V 10
T REEL LED (-) 11
FP-89
S901
CC DOWN SWITCH
CN001
T/S SENSE 1
5V 2
SFG 3
MODE SW2 4
MODE SW1 5
MODE SW0 6
M OUTO (COM) 7
CC DOWN 8
5V 9
END SENSE 10
13/10 11
GND (COM) 12
NC 13
W001
REEL LED 1
REG 5V 2
S REEL FG 3
MODE SW2 4
MODE SW1 5
MODE SW0 6
M OUTO (COM) 7
CC DOWN 8
END SENSE 9
13/10 10
GND (COM) 11
MP HG 12
TOP END LED 13
TOP SENSE 14
ME/MP 15
COM 16
REC PROOF 17
T REEL FG 18
UC-1

4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

RG-5 (LCD TV) PRINTED WIRING BOARD

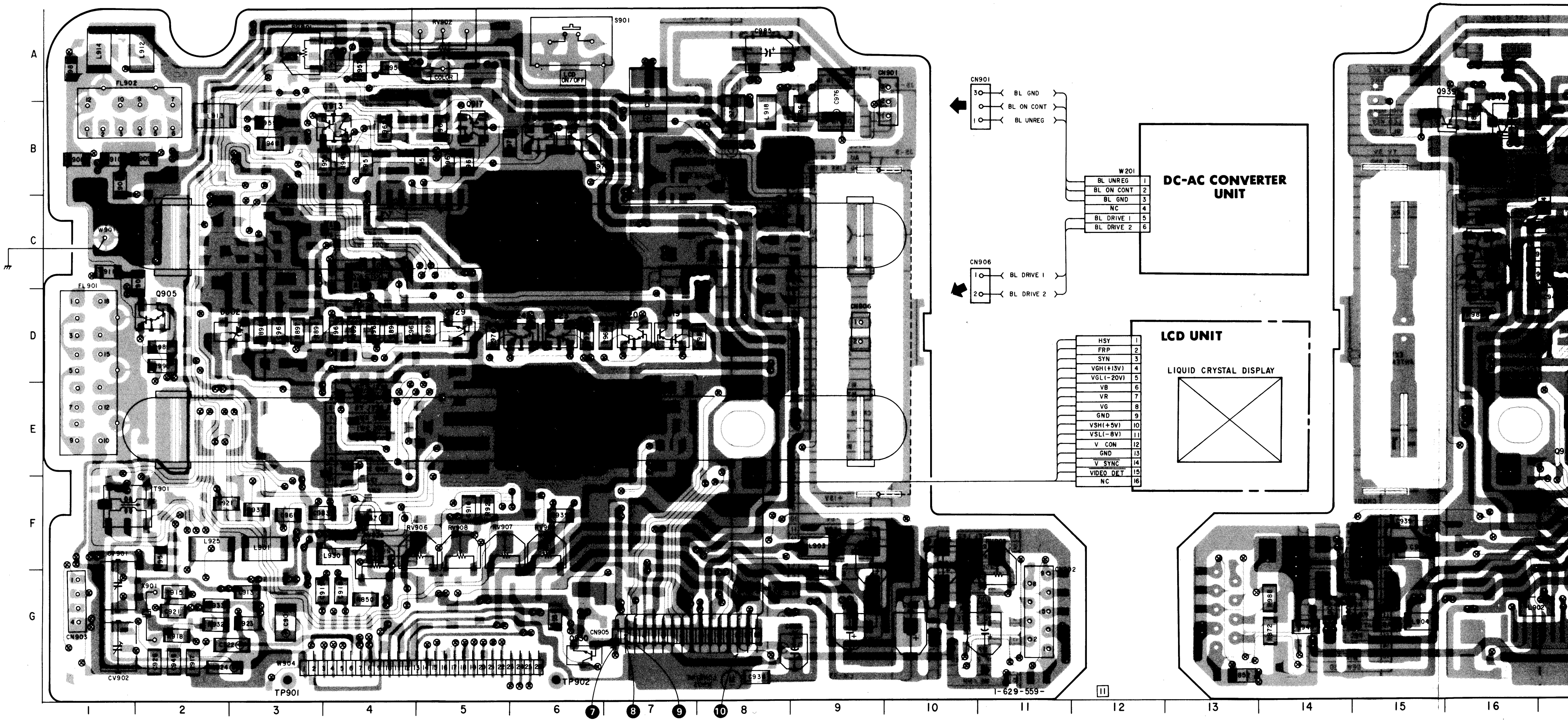
– Ref. No. RG-5 BOARD : 1000 series –

RG-5 BOARD

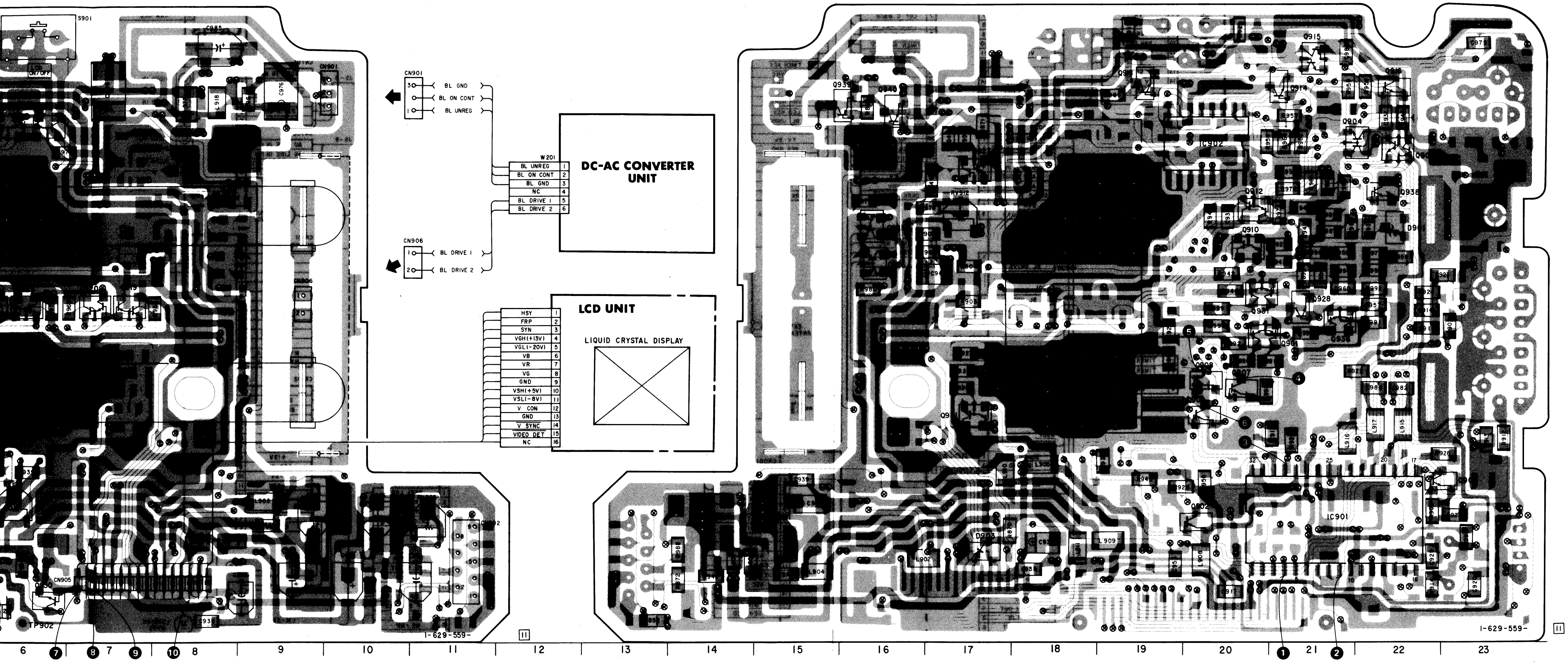
CN901	A-10
CN902	G-11
CN903	G-1
CN905	G-7
CN906	D-9
CV901	G-1
CV902	G-1
D901	C-22
D902	D-3
D903	G-17
IC901	F-21
IC902	B-20
Q901	D-20
Q902	F-20
Q903	B-22
Q904	B-22
Q905	D-2
Q906	F-23
Q907	E-20
Q908	E-20
Q909	E-20
Q910	C-20
Q911	E-17
Q912	C-20
Q913	B-4
Q914	A-21
Q915	A-21
Q916	A-22
Q917	B-5
Q918	A-19
Q919	D-7
Q920	D-7
Q921	B-6
Q922	B-6
Q923	D-6
Q924	D-6
Q925	C-16
Q926	D-16
Q927	B-17
Q928	D-21
Q929	D-5
Q931	D-20
Q936	D-21
Q938	C-22
Q939	B-16
Q940	B-16
RV901	A-3
RV902	A-5
RV905	F-11
RV906	F-5
RV907	F-5
RV908	F-5
RV909	F-6
RV912	C-17
RV920	F-4
TP901	G-3
TP902	G-6
W901	C-1
W904	G-4

RG-5 BOARD (COMPONENT SIDE)

RG-5 BOARD (CONDUCTOR SIDE)


A
B
C
D
E
F
G
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
⑦
⑧
⑨
⑩
S901
RV902
LCD ON/OFF
COLOR
CN901
L914
L912
FL902
Q913
Q917
W901
FL901
Q905
T901
CV901
CV902
CN903
TP901
TP902
CN905
RV906
RV908
RV907
L925
L930
CN906
1-629-559-
11
CN901
BL GND
BL ON CONT
BL UNREG
W201
DC-AC CONVERTER UNIT
NC
BL DRIVE 1
BL DRIVE 2
CN906
LCD UNIT
LIQUID CRYSTAL DISPLAY
HSY
FRP
SYN
VGH(+13V)
VGL(-20V)
VB
VR
VG
GND
VSH(+5V)
VSL(-8V)
V CON
V SYNC
VIDEO DET

RG-5 BOARD (CONDUCTOR SIDE)


S901
CN901
3
1
BL GND
BL ON CONT
BL UNREG
W201
BL UNREG 1
BL ON CONT 2
BL GND 3
NC 4
BL DRIVE 1 5
BL DRIVE 2 6
DC-AC CONVERTER UNIT
CN906
1
2
BL DRIVE 1
BL DRIVE 2
LCD UNIT
HSY 1
FRP 2
SYN 3
VGH(+13V) 4
VGL(-20V) 5
VB 6
VR 7
VG 8
GND 9
VSH(+5V) 10
VSL(-8V) 11
V CON 12
GND 13
V SYNC 14
VIDEO DET 15
NC 16
LIQUID CRYSTAL DISPLAY
CN905
TP902
Q939
Q915
Q914
Q904
Q938
Q910
Q912
Q928
Q931
Q907
Q908
Q902
Q903
IC902
IC901
L915
L916
L917
L902
L904
L909
1-629-559-
11
6
7
8
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10
11
12
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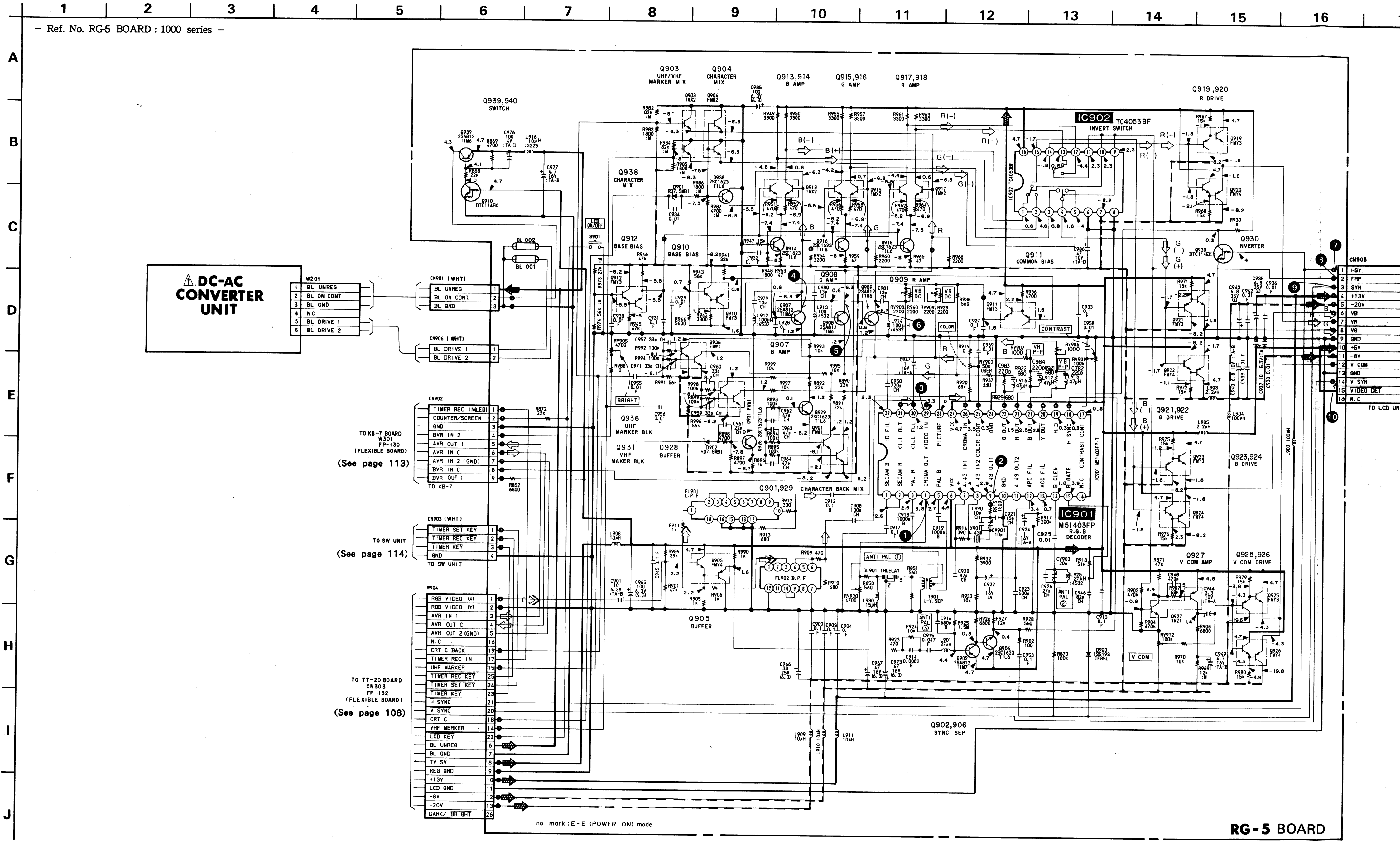
RG-5 (LCD TV) SCHEMATIC DIAGRAM

– Ref. No. RG-5 BOARD : 1000 series –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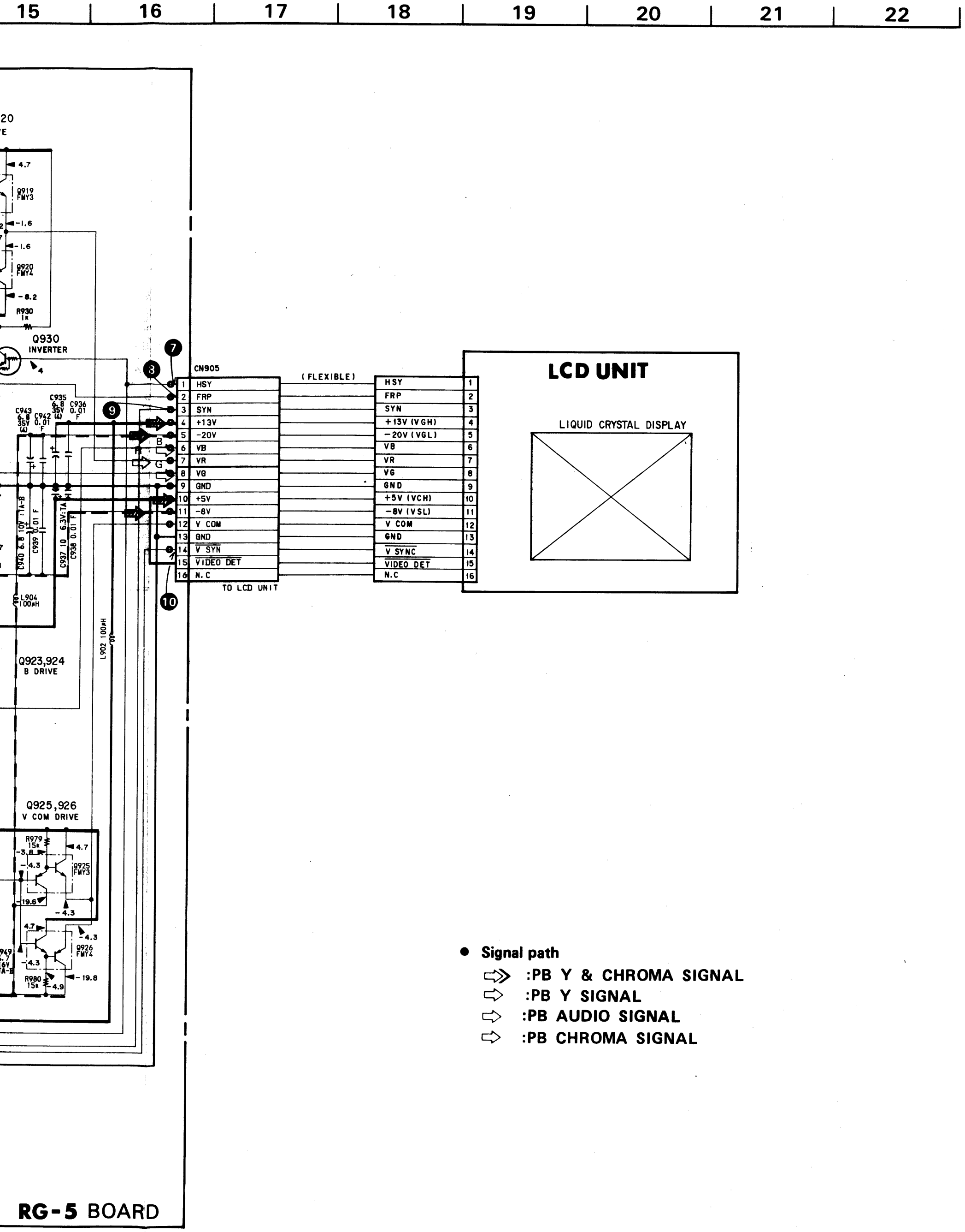
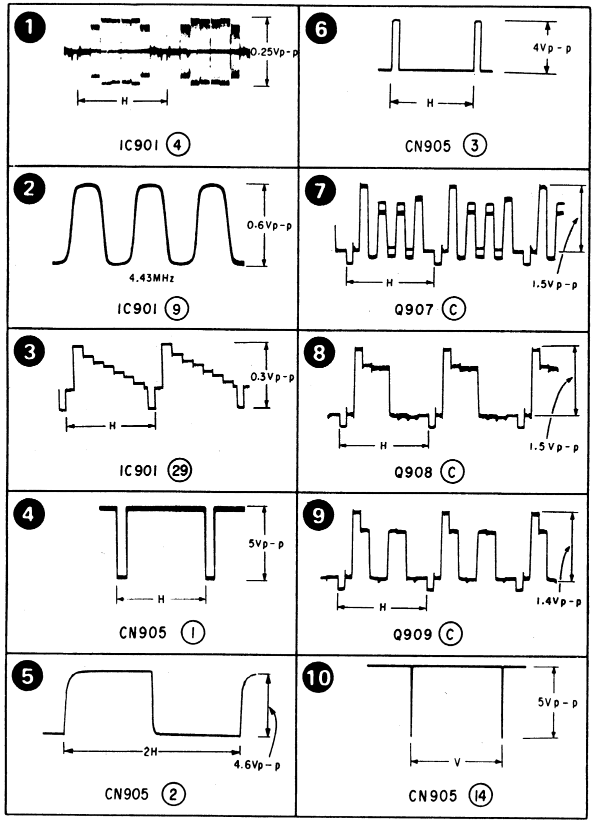
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
⚠ DC-AC CONVERTER UNIT
W201
1 BL UNREG
2 BL ON CONT
3 BL GND
4 NC
5 BL DRIVE 1
6 BL DRIVE 2
CN901 (WHT)
BL UNREG 1
BL ON CONT 2
BL GND 3
CN906 (WHT)
BL DRIVE 1 1
BL DRIVE 2 2
CN902
TIMER REC IN (LED) 1
COUNTER/SCREEN 2
GND 3
BVR IN 2 4
AVR OUT 1 5
AVR IN C 6
AVR IN 2 (GND) 7
BVR IN C 8
BVR OUT 1 9
TO KB-7 BOARD W301 FP-130 (FLEXIBLE BOARD)
(See page 113)
TO KB-7
CN903 (WHT)
TIMER SET KEY 1
TIMER REC KEY 2
TIMER KEY 3
GND 4
TO SW UNIT
(See page 114)
TO SW UNIT
W904
RGB VIDEO (X) 1
RGB VIDEO (Y) 2
AVR IN 1 3
AVR OUT C 4
AVR OUT 2 (GND) 5
N.C 16
CRT C BACK 19
TIMER REC IN 17
UHF MARKER 15
TIMER REC KEY 25
TIMER SET KEY 24
TIMER KEY 23
H SYNC 21
V SYNC 20
CRT C 18
VHF MERKER 14
LCD KEY 22
BL UNREG 6
BL GND 7
TV 5V 8
REG GND 9
+13V 10
LCD GND 11
-8V 12
-20V 13
DARK/ BRIGHT 26
TO TT-20 BOARD CN303 FP-132 (FLEXIBLE BOARD)
(See page 108)
Q939,940 SWITCH
Q903 UHF/VHF MARKER MIX
Q904 CHARACTER MIX
Q938 CHARACTER MIX
Q913,914 B AMP
Q915,916 G AMP
Q917,918 R AMP
IC902 TC4053BF INVERT SWITCH
Q919,920 R DRIVE
Q930 INVERTER
Q912 BASE BIAS
Q910 BASE BIAS
Q911 COMMON BIAS
Q908 G AMP
Q909 R AMP
Q907 B AMP
CONTRAST
COLOR
BRIGHT
Q936 UHF MARKER BLK
Q931 VHF MAKER BLK
Q928 BUFFER
Q921,922 G DRIVE
Q923,924 B DRIVE
IC901 M51403FP R.G.B DECODER
Q901,929 CHARACTER BACK MIX
FL901 L.P.F
FL902 B.P.F
ANTI PAL ①
ANTI PAL ②
ANTI PAL ③
DL901 1HDELAY
T901 U-V. SEP
Q905 BUFFER
Q927 V COM AMP
Q925,926 V COM DRIVE
V COM
Q902,906 SYNC SEP
BL 002
BL 001
LCD ON/OFF
S901
CN905
1 HSY
2 FRP
3 SYN
4 +13V
5 -20V
6 VB
7 VR
8 VG
9 GND
10 +5V
11 -8V
12 V COM
13 GND
14 V SYNC
15 VIDEO DET
16 N.C
TO LCD UN
no mark : E-E (POWER ON) mode
RG-5 BOARD


15
16
17
18
19
20
21
22
Q930
INVERTER
Q919 FMY3
Q920 FMY4
R930 1k
CN905
1 HSY
2 FRP
3 SYN
4 +13V
5 -20V
6 VB
7 VR
8 VG
9 GND
10 +5V
11 -8V
12 V COM
13 GND
14 V SYN
15 VIDEO DET
16 N.C
TO LCD UNIT
(FLEXIBLE)
HSY
FRP
SYN
+13V (VGH)
-20V (VGL)
VB
VR
VG
GND
+5V (VCH)
-8V (VSL)
V COM
GND
V SYNC
VIDEO DET
N.C
LCD UNIT
LIQUID CRYSTAL DISPLAY
L904 100μH
L902 100μH
Q923,924
B DRIVE
Q925,926
V COM DRIVE
Q925 FMY3
Q926 FMY4
R979 15k
R980 15k
RG-5 BOARD

- **Signal path**
  - ⇨⇨ :PB Y & CHROMA SIGNAL
  - ⇨ :PB Y SIGNAL
  - ⇨ :PB AUDIO SIGNAL
  - ⇨ :PB CHROMA SIGNAL

RG-5 BOARD


①
0.25Vp-p
H
IC901 ④
⑥
4Vp-p
H
CN905 ③
②
0.6Vp-p
4.43MHz
IC901 ⑨
⑦
H
1.5Vp-p
Q907 Ⓒ
③
0.3Vp-p
H
IC901 ㉙
⑧
H
1.5Vp-p
Q908 Ⓒ
④
5Vp-p
H
CN905 ①
⑨
H
1.4Vp-p
Q909 Ⓒ
⑤
2H
4.6Vp-p
CN905 ②
⑩
5Vp-p
V
CN905 ⑭

THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary note is printed in each block.)

Note (Schematic Diagram)

- Caution to be exercised when replacing chip components Do not reuse the removed components but use new components.
  Caution should be taken as the negative side of the tantalum capacitor is weak toward heat.
- All capacitors which resistance pressure 50V or less are not indicated except for chemicals and tantalums. The unit is all μF (p is pF).
- All resistors are in ohms, 1/10W unless otherwise noted. kΩ : 1000Ω, MΩ : 1000kΩ.
- All variable and semi-fixed resistors have characteristics curve B, unless otherwise noted.
- ▭ : panel designation.
- ▭ : adjustment designation.
- ▬ : B+ line.
- - - - : B− line.
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator.
- All voltage are dc measured with a VOM (10MΩ)

Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

Note (Printed Wiring Board)

- ○— : indicates a lead wire mounted on the component side.
- ●— : indicates a lead wire mounted on the printed side.
- ⊗ : Through hole.
- ▦ : Pattern from the side which enables seeing.
- ▦ : Pattern of the rear side.

Note

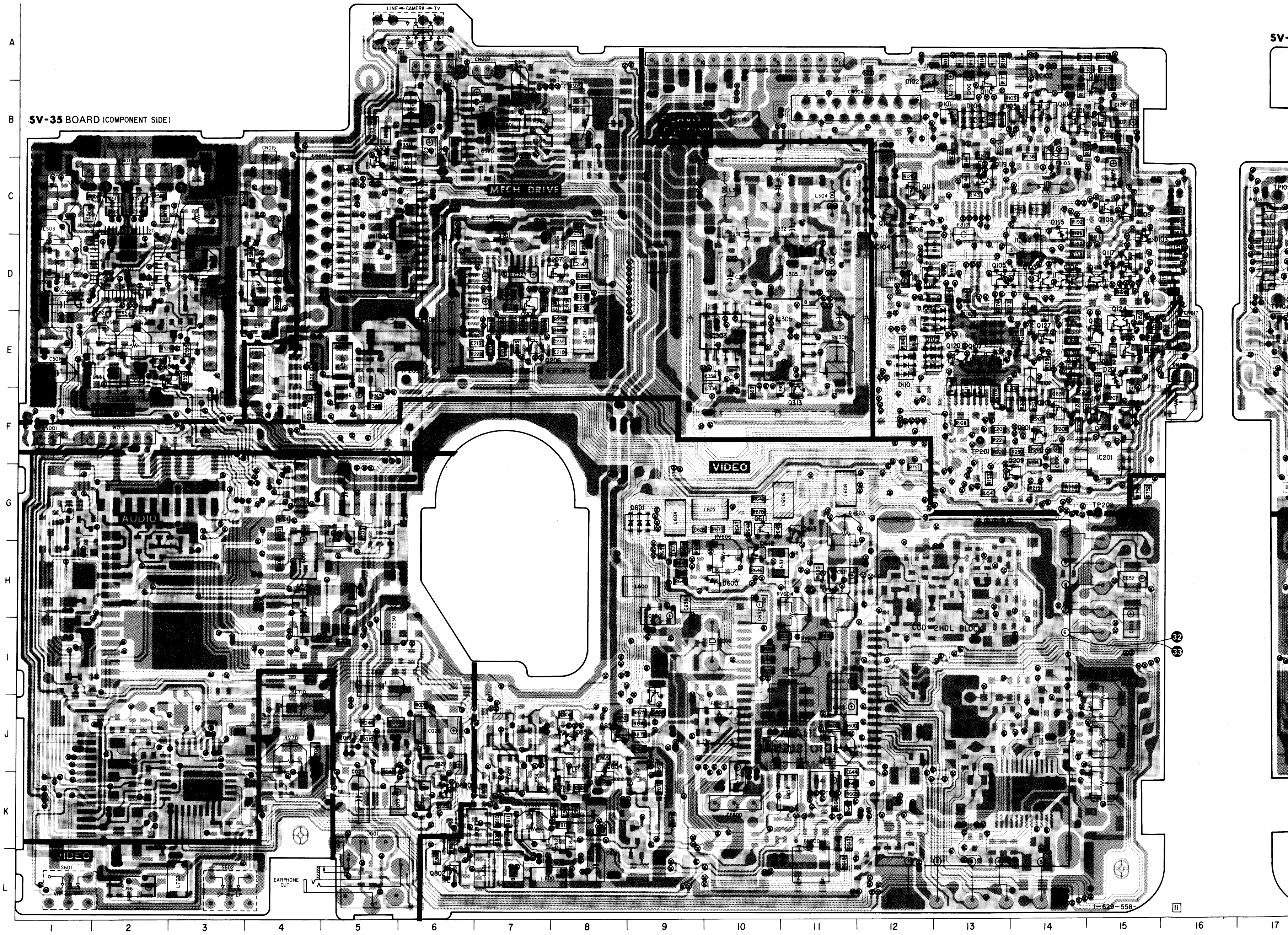
Conductor side:	Parts on the conductor side being seen from the conductor are stated.
Component side:	Parts on the component side being seen from the component are stated.

SV-35 (VIDEO／AUDIO) PRINTED WIRING BOARD

– Ref. No. SV-35 BOARD : 2000 series –

SV-35 BOARD

CN001	F-1
CN002	E-16
CN004	B-11
CN005	A-10
CN006	B-19
CN007	A-7
CN008	A-6
CN009	E-4
CN010	C-4
CN014	C-2
CN015	C-4
CN016	J-31
CN017	E-16
CN018	E-3
D001	J-31
D002	G-31
D003	J-27
D080	K-6
D101	B-13
D102	A-12
D103	D-15
D104	B-13
D105	B-14
D106	C-12
D107	E-13
D108	E-13
D109	E-12
D110	E-12
D111	E-13
D112	E-14
D115	C-14
D201	E-15
D301	C-22
D302	C-22
D303	E-22
D600	H-10
D601	G-9
D850	J-8
D900	I-19
D901	I-19
HIC001	H-30
IC001	K-27
IC101	D-19
IC102	A-14
IC103	D-14
IC104	D-12
IC201	F-15
IC202	D-25
IC301	B-25
IC302	B-24
IC303	E-10
IC304	B-27
IC305	E-11
IC306	E-28
IC307	C-5
IC501	D-2
IC600	I-22
IC701	K-30
IC900	K-19
Q001	G-31
Q002	J-26
Q003	G-31
Q004	I-27
Q005	I-27
Q051	H-30
Q080	J-27
Q081	J-27
Q101	B-14
Q102	B-19
Q103	D-14
Q104	B-14
Q105	D-13
Q106	D-14
Q107	E-13
Q108	C-15
Q109	C-15
Q110	A-13
Q111	E-13
Q112	C-20
Q113	C-12
Q114	C-12
Q115	D-12
Q116	D-15
Q117	D-15
Q118	C-18
Q119	C-13
Q120	E-13
Q121	E-15
Q122	E-15
Q123	E-15
Q124	E-15
Q125	E-14
Q126	E-14
Q127	E-14
Q128	D-18
Q201	F-14
Q202	F-14
Q203	F-15
Q204	F-15
Q205	G-19
Q206	E-7
Q207	D-8
Q208	D-7
Q209	G-14
Q301	A-25
Q302	B-8
Q303	D-23
Q304	C-22
Q305	C-5
Q306	C-22
Q309	D-22
Q310	D-22
Q311	C-21
Q312	E-22
Q313	F-11
Q314	F-27
Q316	B-27
Q501	D-31
Q503	E-30
Q551	E-30
Q552	E-3
Q581	D-29
Q582	C-4
Q604	H-20
Q605	H-20
Q606	H-19
Q607	H-19
Q608	H-19
Q609	H-19
Q610	H-23
Q611	G-10
Q612	H-10
Q613	G-11
Q614	H-23
Q615	J-23
Q616	K-22
Q617	K-21
Q701	L-30
Q702	L-30
Q703	J-30
Q704	J-31
Q800	L-24
Q801	K-25
Q802	L-6
Q803	K-26
Q804	K-26
Q805	K-25
Q806	L-25
Q850	J-25
Q851	K-25
Q853	J-24
Q854	K-8
Q855	K-24
Q856	I-9
Q857	J-8
Q900	J-19
Q902	L-19
Q903	K-21
Q904	K-20
Q905	J-19
RV101	F-16
RV102	F-18
RV103	E-18
RV104	E-18
RV201	F-18
RV301	E-11
RV302	E-27
RV501	C-3
RV502	C-1
RV503	D-1
RV504	E-2
RV505	E-2
RV600	J-11
RV601	H-11
RV602	J-11
RV603	G-11
RV604	H-11
RV605	I-11
RV606	H-10
RV701	J-4
RV800	K-7
RV901	K-15
RV902	J-15
RV903	I-15
TP104	D-17
TP105	C-17
TP201	F-13
TP202	G-15
TP203	E-6
TP301	E-6
W003	C-17
W011	G-4
W012	G-27
W013	F-2



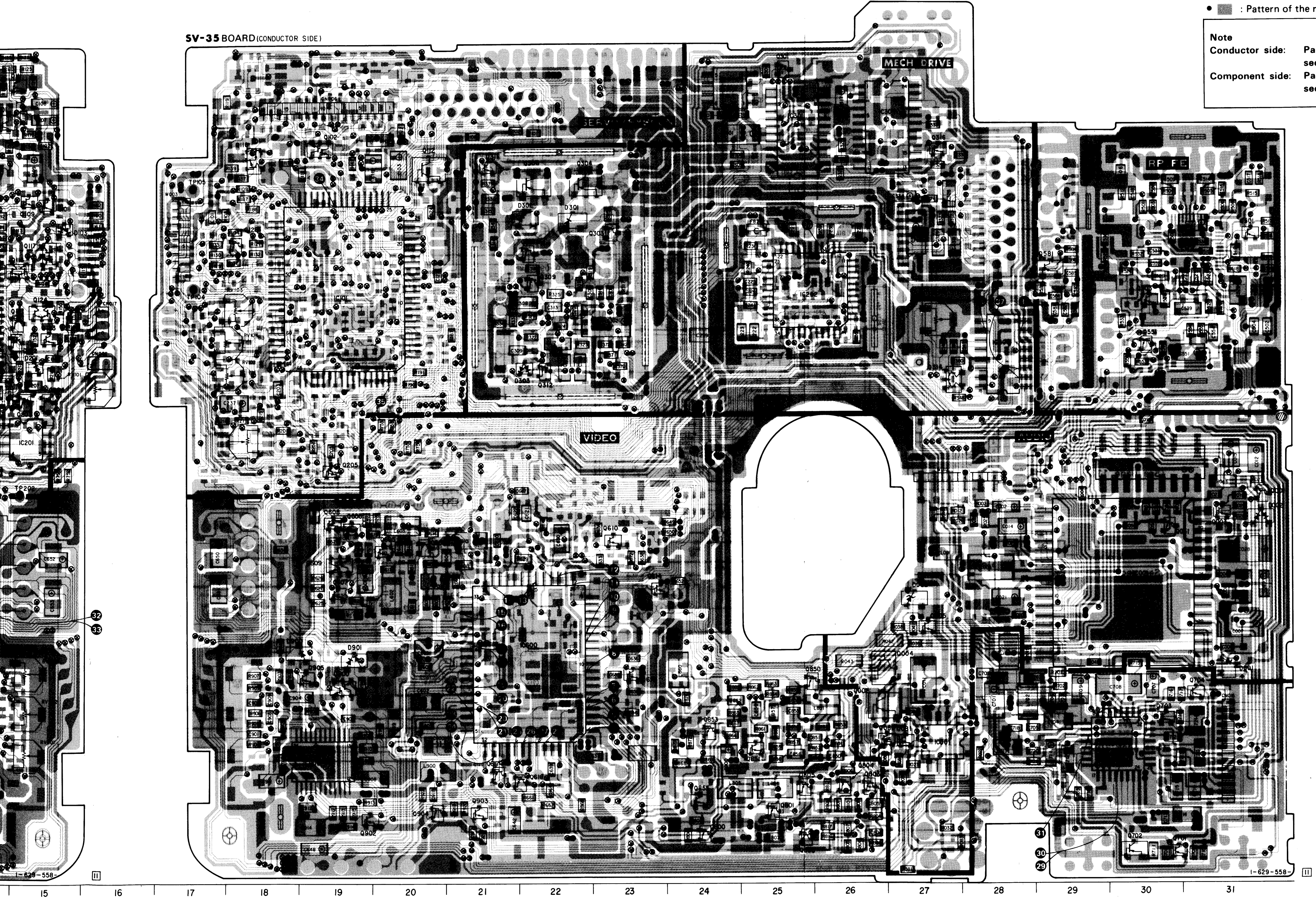
Note (Printed Wiring Board)

- ▨ : Pattern from the side which enables seeing.
- ▨ : Pattern of the rear side.

Note

Conductor side:	Parts on the conductor side being seen from the conductor are stated.
Component side:	Parts on the component side being seen from the component are stated.

SV-35 BOARD (CONDUCTOR SIDE)


MECH DRIVE
VIDEO
RF FE
IC201
TP105
TP104
TP209
Q102
Q205
D301
D302
Q304
Q303
Q309
D303
Q312
IC201
Q581
Q610
Q608
D901
Q902
Q903
Q853
Q850
Q702
C652
C650
C708
32
33
31
30
29
1-629-558-
11
15
16
17
18
19
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21
22
23
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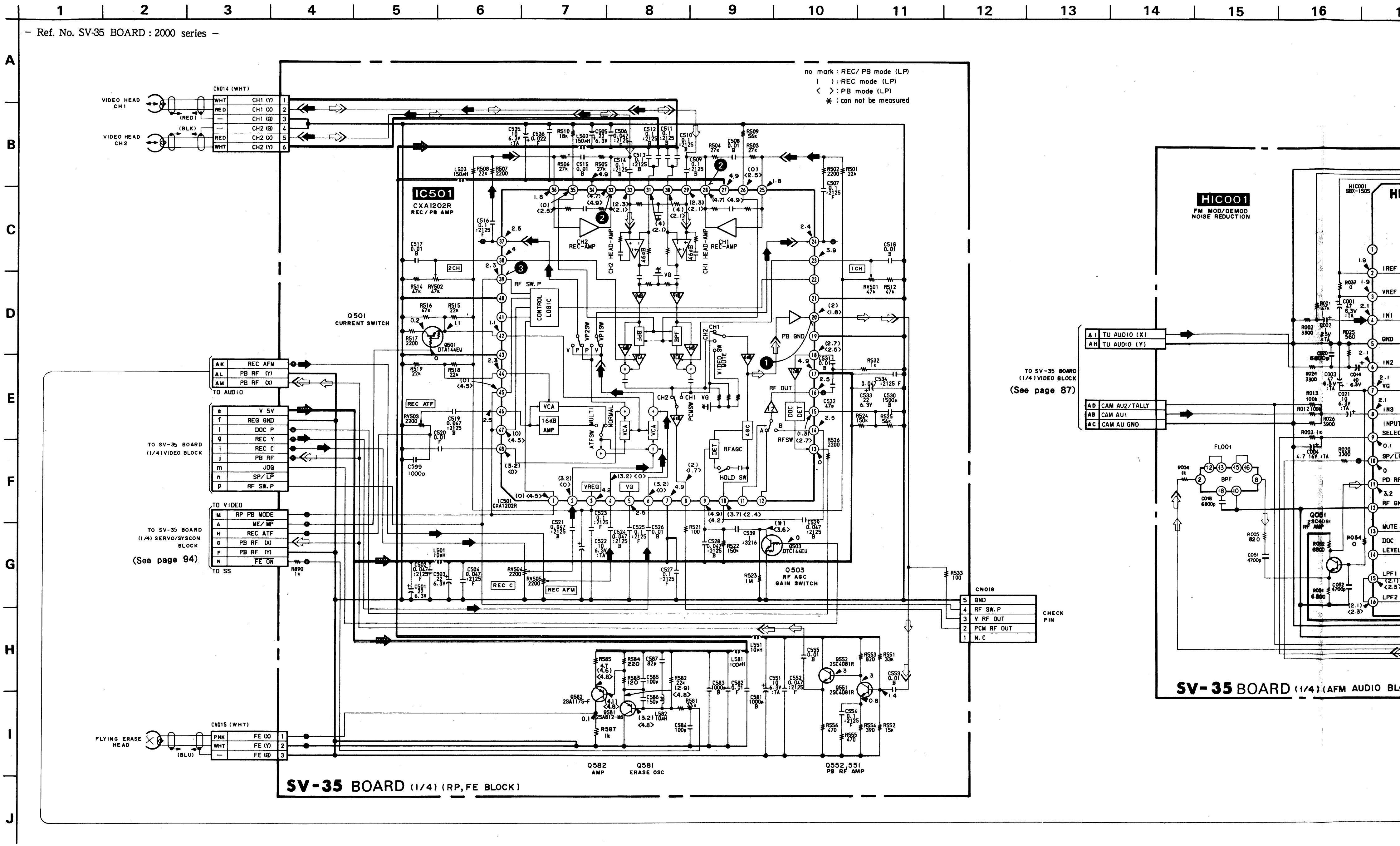
27
28
29
30
31

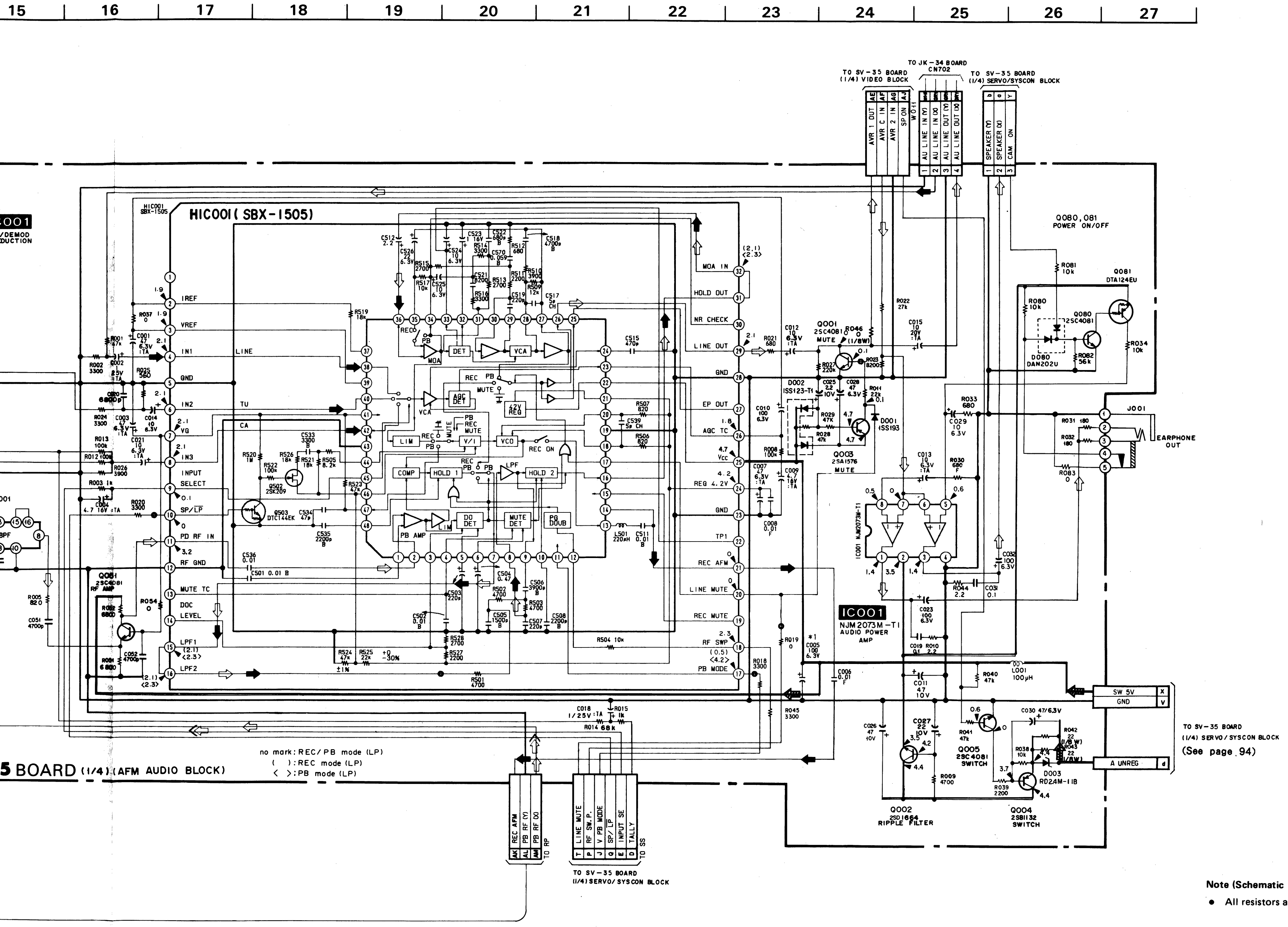
SV-35 (VIDEO/AUDIO) SCHEMATIC DIAGRAM

– Ref. No. SV-35 BOARD : 2000 series –

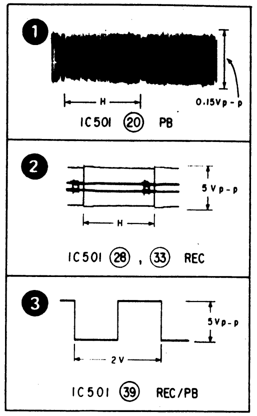


no mark : REC/PB mode (LP)
( ) : REC mode (LP)
< > : PB mode (LP)
✱ : can not be measured

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
VIDEO HEAD CH1
VIDEO HEAD CH2
CN014 (WHT)
WHT CH1 (Y) 1
RED CH1 (X) 2
— CH1 (G) 3
— CH2 (G) 4
RED CH2 (X) 5
WHT CH2 (Y) 6
(RED)
(BLK)
IC501
CXA1202R
REC/PB AMP
CH2 REC-AMP
CH1 REC-AMP
CH2 HEAD-AMP
CH1 HEAD-AMP
CONTROL LOGIC
RF SW. P
VP2SW
VP1SW
BPF
CH1
CH2
VIDEO MUTE
PB GND
RF OUT
DOC DET
AGC
DET
RFAGC
HOLD SW
RFSW
PCMSW
NORMAL
MULTI
ATFSW
VCA
16dB AMP
VREG
VG
2CH
1CH
REC ATF
REC C
REC AFM
Q501
CURRENT SWITCH
DTA144EU
Q503
RF AGC GAIN SWITCH
DTC144EU
AK REC AFM
AL PB RF (Y)
AM PB RF (X)
TO AUDIO
e V 5V
f REG GND
i DOC P
g REC Y
i REC C
j PB RF
m JOG
n SP/LP
p RF SW. P
TO SV-35 BOARD (1/4) VIDEO BLOCK
TO VIDEO
M RP PB MODE
A ME/MP
H REC ATF
G PB RF (X)
F PB RF (Y)
N FE ON
TO SS
TO SV-35 BOARD (1/4) SERVO/SYSCON BLOCK
(See page 94)
CN018
5 GND
4 RF SW. P
3 V RF OUT
2 PCM RF OUT
1 N.C
CHECK PIN
FLYING ERASE HEAD
CN015 (WHT)
PNK FE (X) 1
WHT FE (Y) 2
— FE (G) 3
(BLU)
Q582 AMP
2SA1175-F
Q581 ERASE OSC
2SA812-M6
Q552,551 PB RF AMP
2SC4081R
SV-35 BOARD (1/4) (RP, FE BLOCK)
TO SV-35 BOARD (1/4) VIDEO BLOCK
(See page 87)
AI TU AUDIO (X)
AH TU AUDIO (Y)
AD CAM AU2/TALLY
AB CAM AU1
AC CAM AU GND
HIC001
FM MOD/DEMOD NOISE REDUCTION
HIC001 SBX-1505
FL001
BPF
Q051
2SC4081
RF AMP
IREF
VREF
IN1
GND
IN2
VG
IN3
INPUT SELEC
SP/LP
PD RF
RF GN
MUTE
DOC LEVEL
LPF1
LPF2
SV-35 BOARD (1/4) (AFM AUDIO BL


15
16
17
18
19
20
21
22
23
24
25
26
27
HIC001 (SBX-1505)
HIC001 SBX-1505
IREF
VREF
IN1
LINE
GND
IN2
TU
CA
VG
IN3
INPUT SELECT
SP/LP
PB RF IN
RF GND
MUTE TC
DOC LEVEL
LPF1
LPF2
MOA IN
HOLD OUT
NR CHECK
LINE OUT
GND
EP OUT
AGC TC
Vcc
REG 4.2V
GND
TP1
REC AFM
LINE MUTE
REC MUTE
RF SWP
PB MODE
DET
VCA
MOA
REC
PB
MUTE
AGC DET
4.2V REG
LIM
V/I
VCO
REC ON
COMP
HOLD 1
HOLD 2
LPF
PB AMP
DO DET
MUTE DET
PB DOUB
Q501 2SK209
Q503 DTC144EK
Q051 2SC4081 RF AMP
TO SV-35 BOARD (1/4) VIDEO BLOCK
TO JK-34 BOARD CN702
TO SV-35 BOARD (1/4) SERVO/SYSCON BLOCK
AVR 1 OUT
AVR C IN
AVR 2 IN
SP ON
WO11
AU LINE IN (Y)
AU LINE IN (X)
AU LINE OUT (Y)
AU LINE OUT (X)
SPEAKER (Y)
SPEAKER (X)
CAM ON
Q001 2SC4081 MUTE
D002 1SS123-T
Q003 2SA1576 MUTE
D001 1SS193
IC001 NJM2073M-T1 AUDIO POWER AMP
Q080,081 POWER ON/OFF
Q081 DTA124EU
Q080 2SC4081
D080 DAN202U
J001
EARPHONE OUT
SW 5V
GND
A UNREG
TO SV-35 BOARD (1/4) SERVO/SYSCON BLOCK
(See page 94)
Q002 2SD1664 RIPPLE FILTER
Q005 2SC4081 SWITCH
Q004 2SB1132 SWITCH
D003 RD24M-11B
L001 100μH
5 BOARD (1/4) (AFM AUDIO BLOCK)
no mark: REC/PB mode (LP)
( ): REC mode (LP)
< >: PB mode (LP)
REC AFM
PB RF (Y)
PB RF (X)
TO RP
LINE MUTE
PB SW. P.
V PB MODE
SP/LP
INPUT SE
TALLY
TO SS
TO SV-35 BOARD (1/4) SERVO/SYSCON BLOCK

SV-35 BOARD (HEAD AMP)


①
H
0.15Vp-p
IC501 ⑳ PB
②
H
5Vp-p
IC501 ㉘, ㉝ REC
③
2V
5Vp-p
IC501 ㊴ REC/PB

- Signal path

➡ :REC Y SIGNAL
⇛ :REC Y & CHROMA SIGNAL
⇨ :PB Y & CHROMA SIGNAL
➡ :REC CHROMA SIGNAL
➡ :REC AUDIO SIGNAL
⇨ :PB AUDIO SIGNAL

Note (Schematic Diagram)

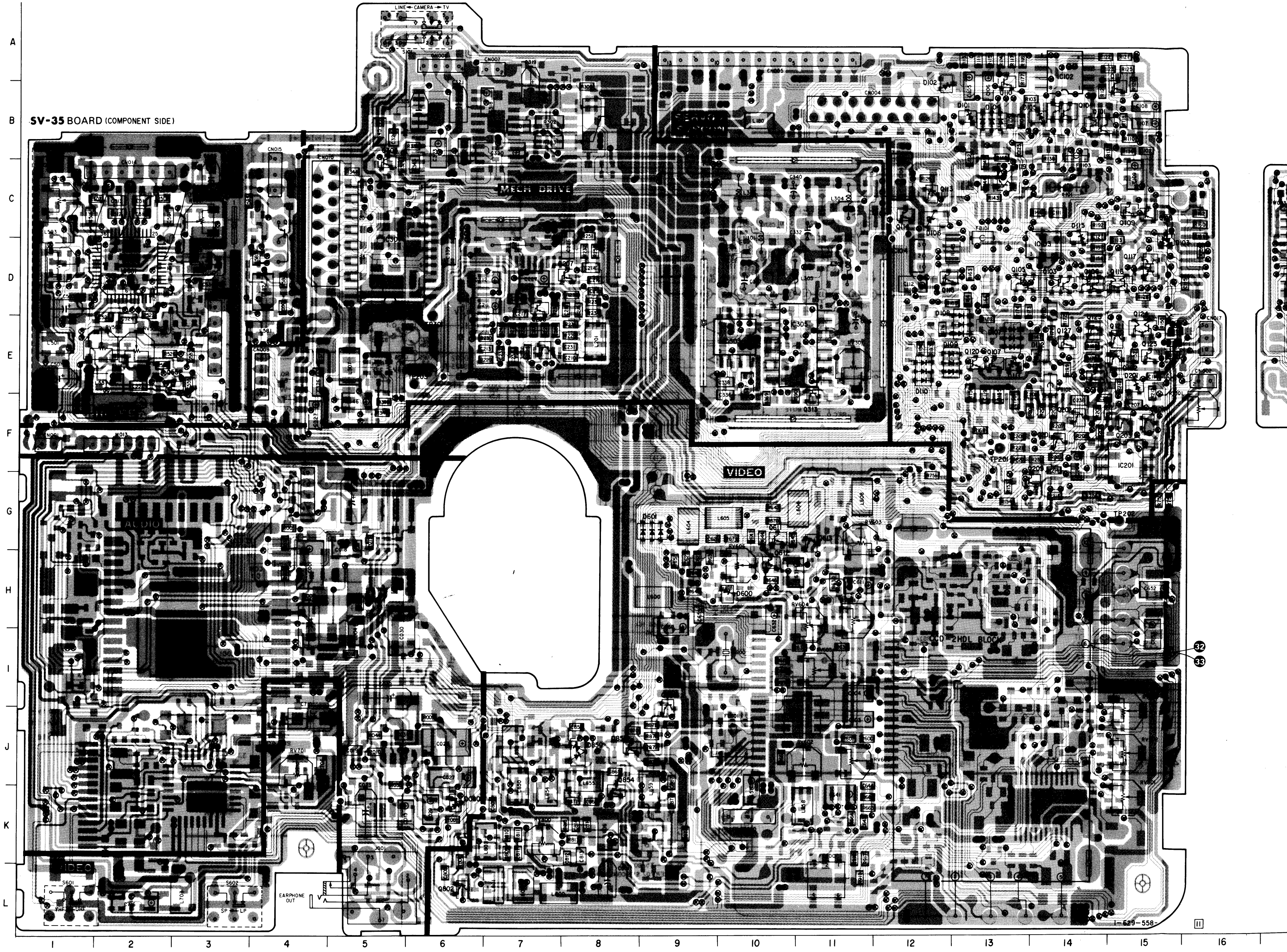
- All resistors are in ohms, 1/16W unless otherwise noted.

SV-35 (VIDEO) PRINTED WIRING BOARD

– Ref. No. SV-34 BOARD : 2000 series –

SV-35 BOARD

CN001	F-1
CN002	E-16
CN004	B-11
CN005	A-10
CN006	B-19
CN007	A-7
CN008	A-6
CN009	E-4
CN010	C-4
CN014	C-2
CN015	C-4
CN016	J-31
CN017	E-16
CN018	E-3
D001	J-31
D002	G-31
D003	J-27
D080	K-6
D101	B-13
D102	A-12
D103	D-15
D104	B-13
D105	B-14
D106	C-12
D107	E-13
D108	E-13
D109	E-12
D110	E-12
D111	E-13
D112	E-14
D115	C-14
D201	E-15
D301	C-22
D302	C-22
D303	E-22
D600	H-10
D601	G-9
D850	J-8
D900	I-19
D901	I-19
HIC001	H-30
IC001	K-27
IC101	D-19
IC102	A-14
IC103	D-14
IC104	D-12
IC201	F-15
IC202	D-25
IC301	B-25
IC302	B-24
IC303	E-10
IC304	B-27
IC305	E-11
IC306	E-28
IC307	C-5
IC501	D-2
IC600	I-22
IC701	K-30
IC900	K-19
Q001	G-31
Q002	J-26
Q003	G-31
Q004	I-27
Q005	I-27
Q051	H-30
Q080	J-27
Q081	J-27
Q101	B-14
Q102	B-19
Q103	D-14
Q104	B-14
Q105	D-13
Q106	D-14
Q107	E-13
Q108	C-15
Q109	C-15
Q110	A-13
Q111	E-13
Q112	C-20
Q113	C-12
Q114	C-12
Q115	D-12
Q116	D-15
Q117	D-15
Q118	C-18
Q119	C-13
Q120	E-13
Q121	E-15
Q122	E-15
Q123	E-15
Q124	E-15
Q125	E-14
Q126	E-14
Q127	E-14
Q128	D-18
Q201	F-14
Q202	F-14
Q203	F-15
Q204	F-15
Q205	G-19
Q206	E-7
Q207	D-8
Q208	D-7
Q209	G-14
Q301	A-25
Q302	B-8
Q303	D-23
Q304	C-22
Q305	C-5
Q306	C-22
Q309	D-22
Q310	D-22
Q311	C-21
Q312	E-22
Q313	F-11
Q314	F-27
Q316	B-27
Q501	D-31
Q503	E-30
Q551	E-30
Q552	E-3
Q581	D-29
Q582	C-4
Q604	H-20
Q605	H-20
Q606	H-19
Q607	H-19
Q608	H-19
Q609	H-19
Q610	H-23
Q611	G-10
Q612	H-10
Q613	G-11
Q614	H-23
Q615	J-23
Q616	K-22
Q617	K-21
Q701	L-30
Q702	L-30
Q703	J-30
Q704	J-31
Q800	L-24
Q801	K-25
Q802	L-6
Q803	K-26
Q804	K-26
Q805	K-25
Q806	L-25
Q850	J-25
Q851	K-25
Q853	J-24
Q854	K-8
Q855	K-24
Q856	I-9
Q857	J-8
Q900	J-19
Q902	L-19
Q903	K-21
Q904	K-20
Q905	J-19
RV101	F-16
RV102	F-18
RV103	E-18
RV104	E-18
RV201	F-18
RV301	E-11
RV302	E-27
RV501	C-3
RV502	C-1
RV503	D-1
RV504	E-2
RV505	E-2
RV600	J-11
RV601	H-11
RV602	J-11
RV603	G-11
RV604	H-11
RV605	I-11
RV606	H-10
RV701	J-4
RV800	K-7
RV901	K-15
RV902	J-15
RV903	I-15
TP104	D-17
TP105	C-17
TP201	F-13
TP202	G-15
TP203	E-6
TP301	E-6
W003	C-17
W011	G-4
W012	G-27
W013	F-2



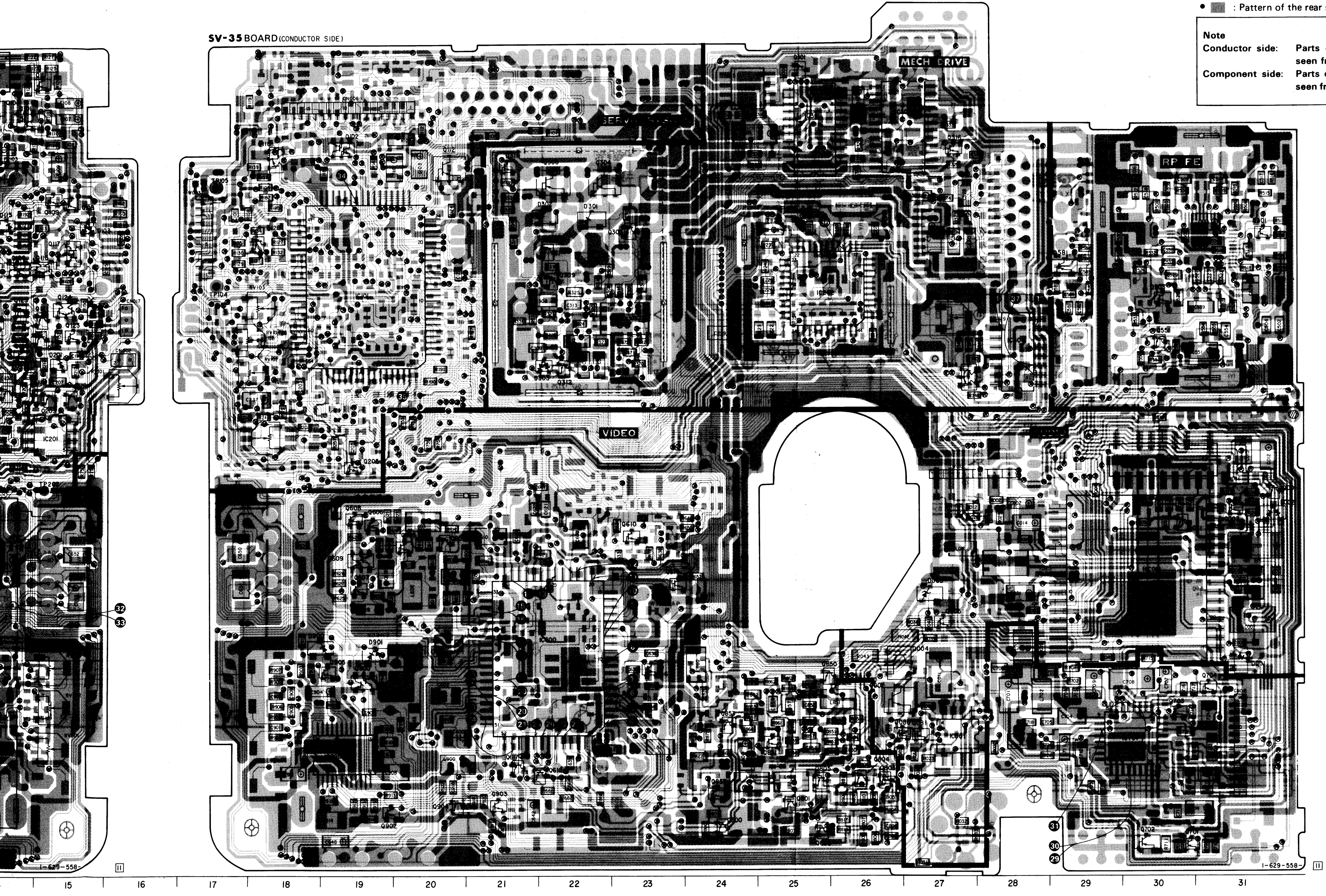
Note (Printed Wiring Board)

- ▨ : Pattern from the side which enables seeing.
- ▩ : Pattern of the rear side.

Note

Conductor side:	Parts on the conductor side being seen from the conductor are stated.
Component side:	Parts on the component side being seen from the component are stated.

SV-35 BOARD (CONDUCTOR SIDE)


MECH DRIVE
SERVO
RP FE
VIDEO
IC201
IC101
D301
Q610
D901
Q902
Q903
Q702
Q701
TP104
TP105
1-629-558-
11
15
16
17
18
19
20
21
22
23
24
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31
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㉛
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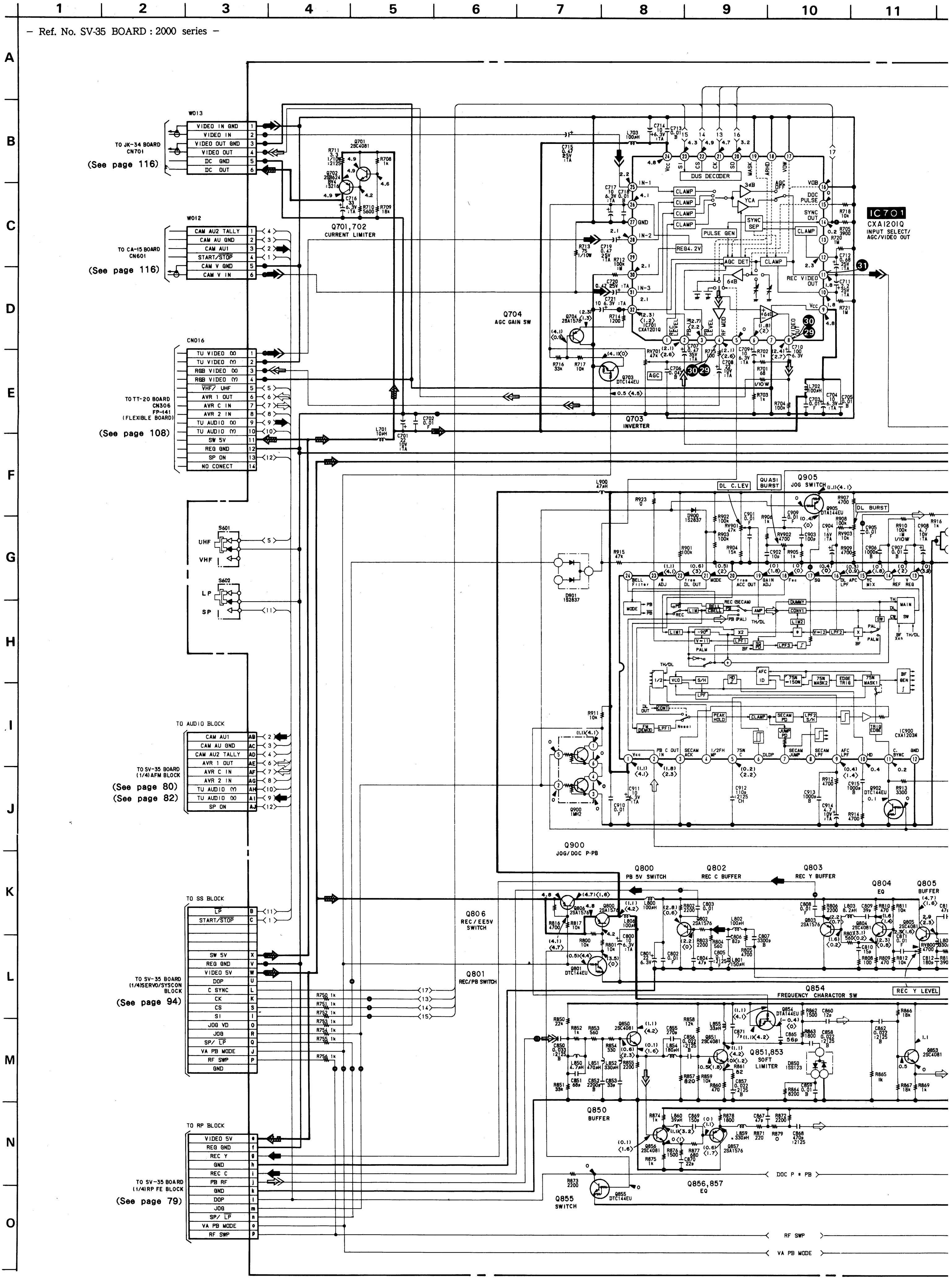
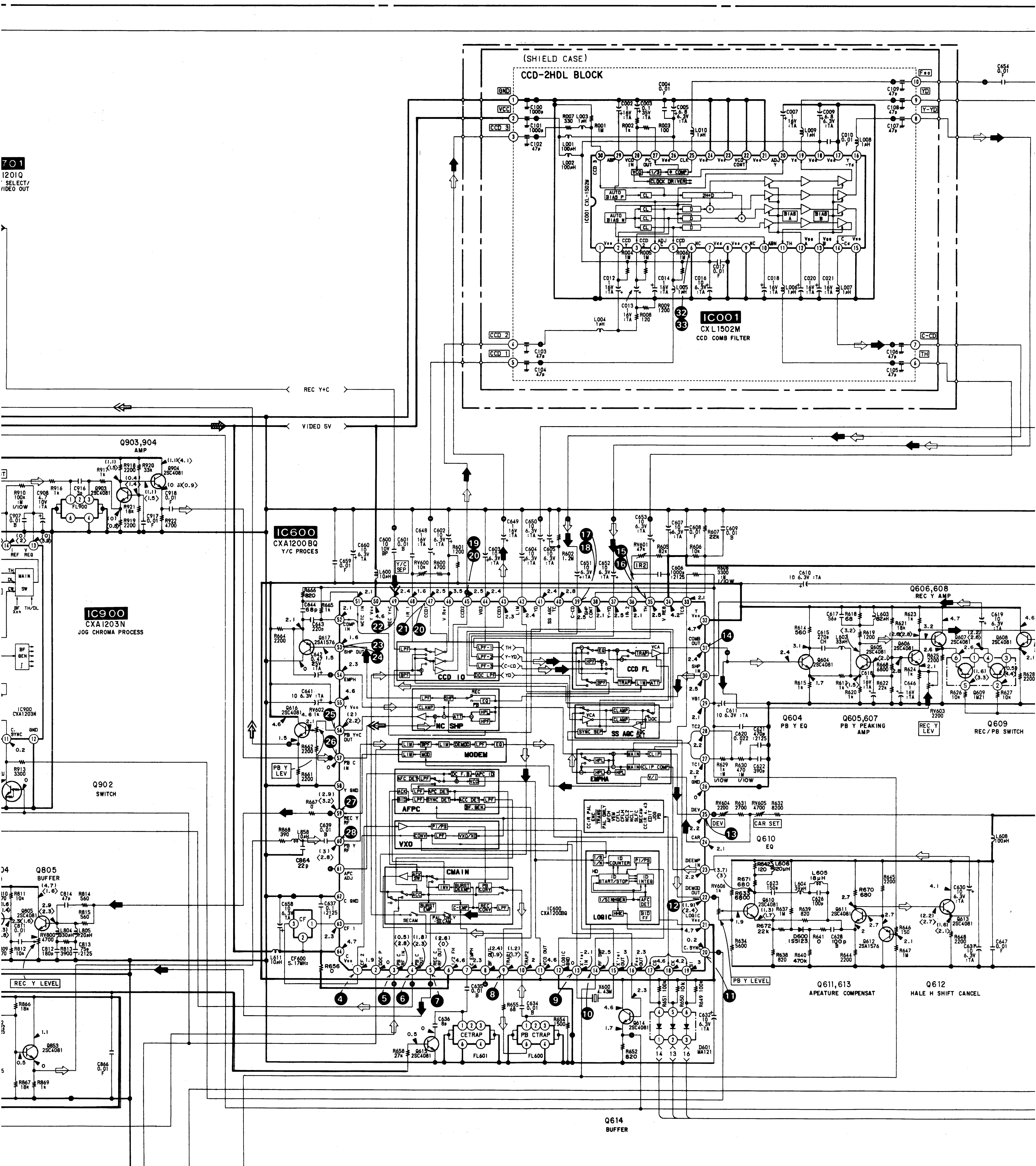
㉝

SV-35 (VIDEO) SCHEMATIC DIAGRAM

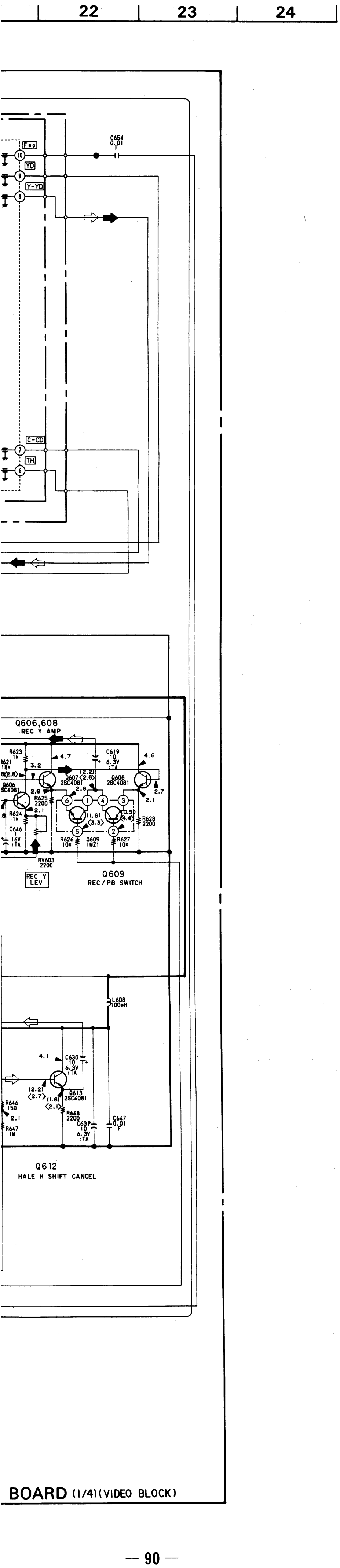
– Ref. No. SV-35 BOARD : 2000 series –


1
2
3
4
5
6
7
8
9
10
11
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
W013
VIDEO IN GND
VIDEO IN
VIDEO OUT GND
VIDEO OUT
DC GND
DC OUT
TO JK-34 BOARD CN701
(See page 116)
W012
CAM AU2 TALLY
CAM AU GND
CAM AU1
START/STOP
CAM V GND
CAM V IN
TO CA-15 BOARD CN601
(See page 116)
CN016
TU VIDEO (X)
TU VIDEO (Y)
RGB VIDEO (X)
RGB VIDEO (Y)
VHF/ UHF
AVR 1 OUT
AVR C IN
AVR 2 IN
TU AUDIO (X)
TU AUDIO (Y)
SW 5V
REG GND
SP ON
NO CONECT
TO TT-20 BOARD CN306 FP-141 (FLEXIBLE BOARD)
(See page 108)
S601
UHF
VHF
S602
LP
SP
TO AUDIO BLOCK
TO SV-35 BOARD (1/4)AFM BLOCK
(See page 80)
(See page 82)
TO SS BLOCK
LP
START/STOP
SW 5V
REG GND
VIDEO 5V
DOP
C SYNC
CK
CS
SI
JOG VD
JOG
SP/ LP
VA PB MODE
RF SWP
GND
TO SV-35 BOARD (1/4)SERVO/SYSCON BLOCK
(See page 94)
TO RP BLOCK
VIDEO 5V
REG GND
REC Y
GND
REC C
PB RF
GND
DOP
JOG
SP/ LP
VA PB MODE
RF SWP
TO SV-35 BOARD (1/4)RP FE BLOCK
(See page 79)
Q701,702
CURRENT LIMITER
Q704
AGC GAIN SW
Q703
INVERTER
IC701
CXA1201Q
INPUT SELECT/ AGC/VIDEO OUT
DUS DECODER
CLAMP
YCA
SYNC SEP
PULSE GEN
REG4.2V
AGC DET
REC VIDEO OUT
DOC PULSE
SYNC OUT
Q905
JOG SWITCH
DL C.LEV
QUASI BURST
DL BURST
D901 1S2837
IC900 CXA1203N
Q900
JOG/DOC P·PB
Q800
PB 5V SWITCH
Q802
REC C BUFFER
Q803
REC Y BUFFER
Q804
EQ
Q805
BUFFER
Q806
REC/EE5V SWITCH
Q801
REC/PB SWITCH
Q854
FREQUENCY CHARACTOR SW
REC Y LEVEL
Q851,853
SOFT LIMITER
Q850
BUFFER
Q856,857
EQ
Q855
SWITCH
DOC P * PB
RF SWP
VA PB MODE


(SHIELD CASE)
CCD-2HDL BLOCK
IC001
CXL1502M
CCD COMB FILTER
GND
VCC
CCD 3
CCD 2
CCD 1
Fsc
YD
Y-YD
C-CD
TH
IC600
CXA1200BQ
Y/C PROCES
CCD IO
CCD FL
NC SHP
SS AGC
MODEM
EMPHA
AFPC
VXO
CMAIN
LOGIC
IC900
CXA1203N
JOG CHROMA PROCESS
Q903,904
AMP
Q902
SWITCH
Q805
BUFFER
Q604
PB Y EQ
Q605,607
PB Y PEAKING AMP
Q606,608
REC Y AMP
Q609
REC/PB SWITCH
Q610
EQ
Q611,613
APEATURE COMPENSAT
Q612
HALE H SHIFT CANCEL
Q614
BUFFER
REC Y+C
VIDEO 5V
REC Y LEVEL
PB Y LEVEL
PB Y LEV
REC Y LEV
CAR SET
DEV
Y/C SEP
CETRAP
FL601
PB CTRAP
FL600
CF600 5.17MHz
X600

no mark : REC/PB mode (LP)
( ) : REC mode (LP)
< > : PB mode (LP)
* : can not be measured

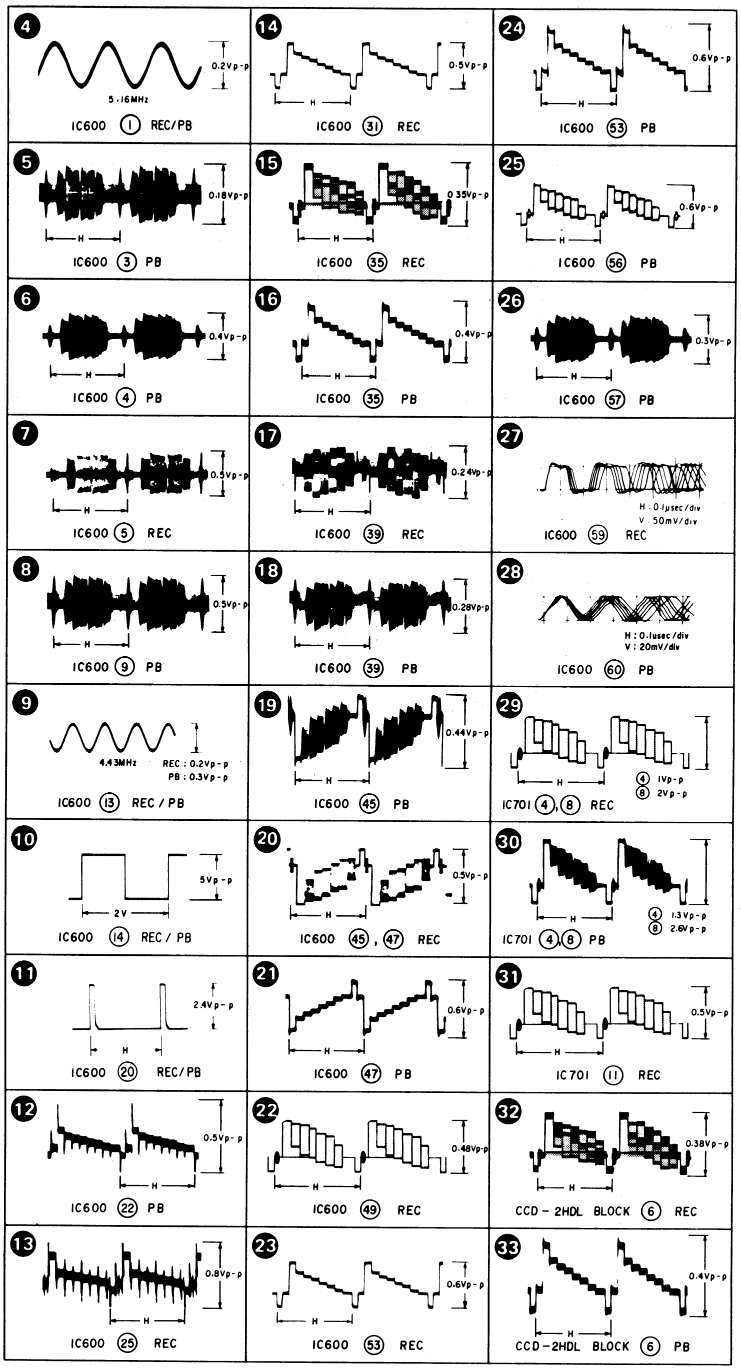
SV-35 BOARD (1/4)(VIDEO BLO



22
23
24
C654 0.01 F
Fsc
YD
Y-YD
C-CD
TH
Q606,608
REC Y AMP
R623 1k
C619 10 6.3V :TA
Q607 2SC4081
Q608 2SC4081
Q606 2SC4081
R625 2200
R624 1k
C646 16V :TA
R626 10k
Q609 IMZ1
R627 10k
R628 2200
RV603 2200
REC Y LEV
Q609
REC/PB SWITCH
L608 100μH
C630 10 6.3V :TA
Q613 2SC4081
R646 150
R647 1M
R648 2200
C631 10 6.3V :TA
C647 0.01 F
Q612
HALE H SHIFT CANCEL

BOARD (1/4)(VIDEO BLOCK)

SV-35 BOARD (VIDEO)



- **Signal path**
  - ➡ :REC Y SIGNAL
  - ⇨ :PB Y SIGNAL
  - ➽ :REC Y & CHROMA SIGNAL
  - ⇰ :PB Y & CHROMA SIGNAL
  - ➡ :REC CHROMA SIGNAL
  - ⇨ :PB CHROMA SIGNAL
  - ➡ :REC AUDIO SIGNAL
  - ⇨ :PB AUDIO SIGNAL

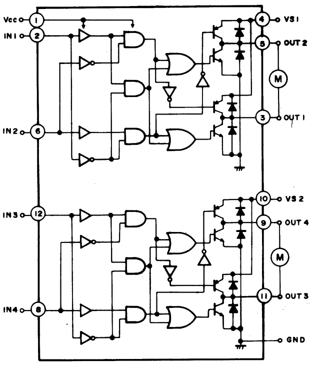
Note (Schematic Diagram)

- All resistors are in ohms, 1/16W unless otherwise noted.

SV-35 (SERVO/SYSTEM CONTROL/MECHANISM DRIVE) SCHEMATIC DIAGRAM

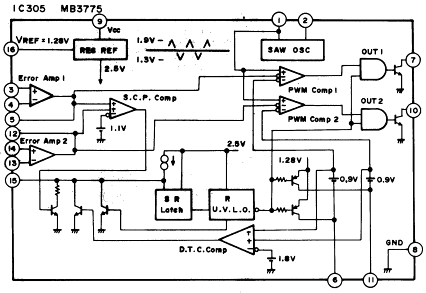
– Ref. No. SV-35 BOARD : 2000 series –

IC301 LB1631



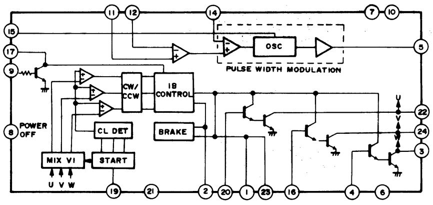
Vcc 1
IN1 2
IN2 6
IN3 12
IN4 8
4 VS1
5 OUT2
M
3 OUT1
10 VS2
9 OUT4
M
11 OUT3
GND

IC305 MB3775



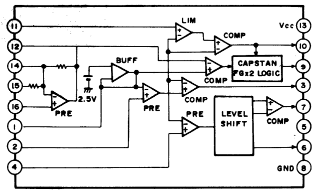
9 Vcc
16 VREF=1.28V
REG REF
2.5V
1.9V
1.3V
1 2
SAW OSC
Error Amp 1
S.C.P. Comp
1.1V
Error Amp 2
2.5V
1.28V
0.9V
0.9V
PWM Comp 1
PWM Comp 2
OUT 1
OUT 2
7
10
S R Latch
R U.V.L.O.
D.T.C. Comp
1.8V
GND 8
3 4 5 12 14 13 15 6 11

IC304 CX20114

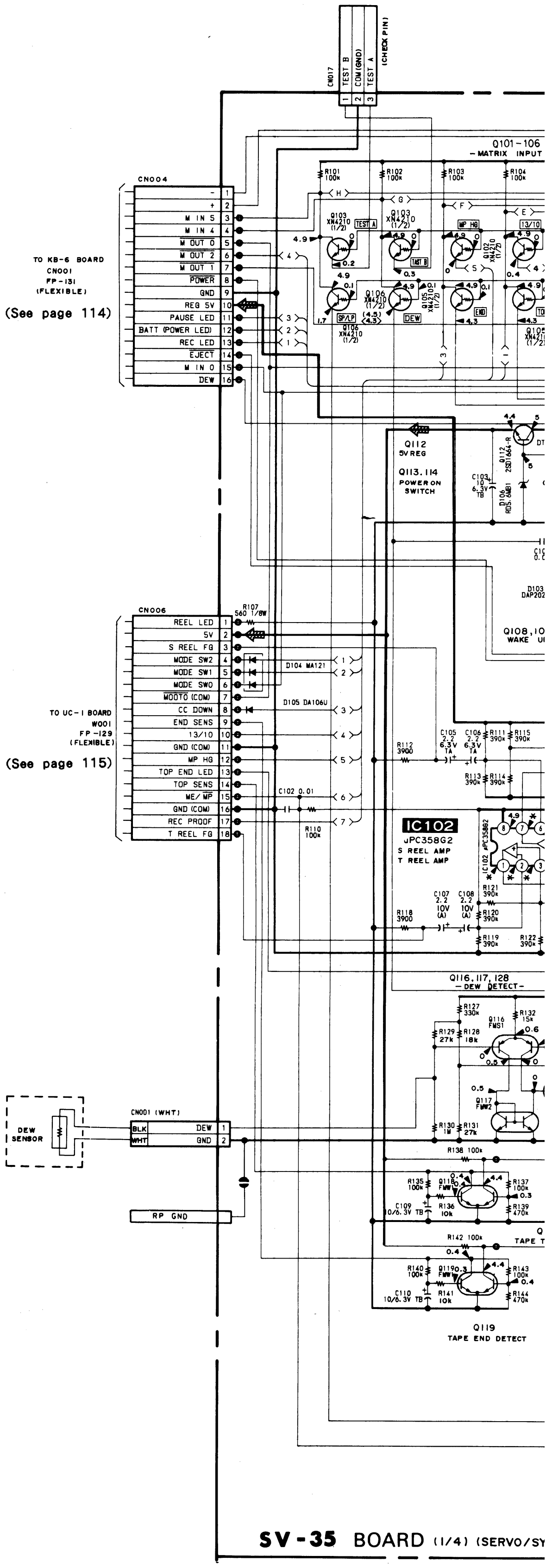


11 12 14 7 10
15 17 9
OSC
PULSE WIDTH MODULATION
5
CW/CCW
IB CONTROL
CL DET
BRAKE
POWER OFF 8
MIX VI
START
U V W
22 24 3
19 21 2 20 1 23 16 4 6

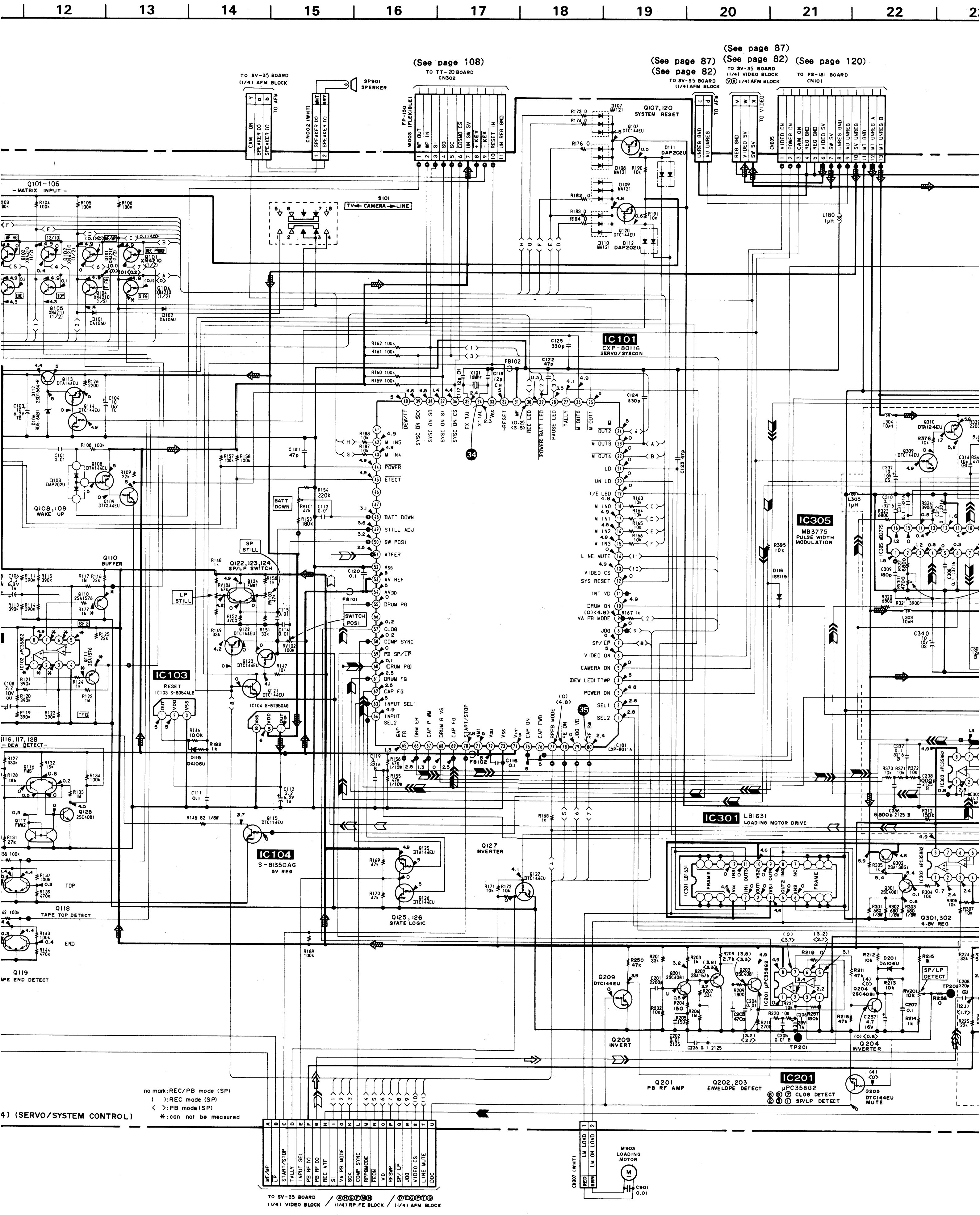
IC306 CX20115A



11 12 14 15 16 1 2 4
LIM
COMP
Vcc 13
10
BUFF
2.5V
PRE
PRE
COMP
CAPSTAN FGx2 LOGIC
9
3
PRE
LEVEL SHIFT
COMP
7
5
6
GND 8

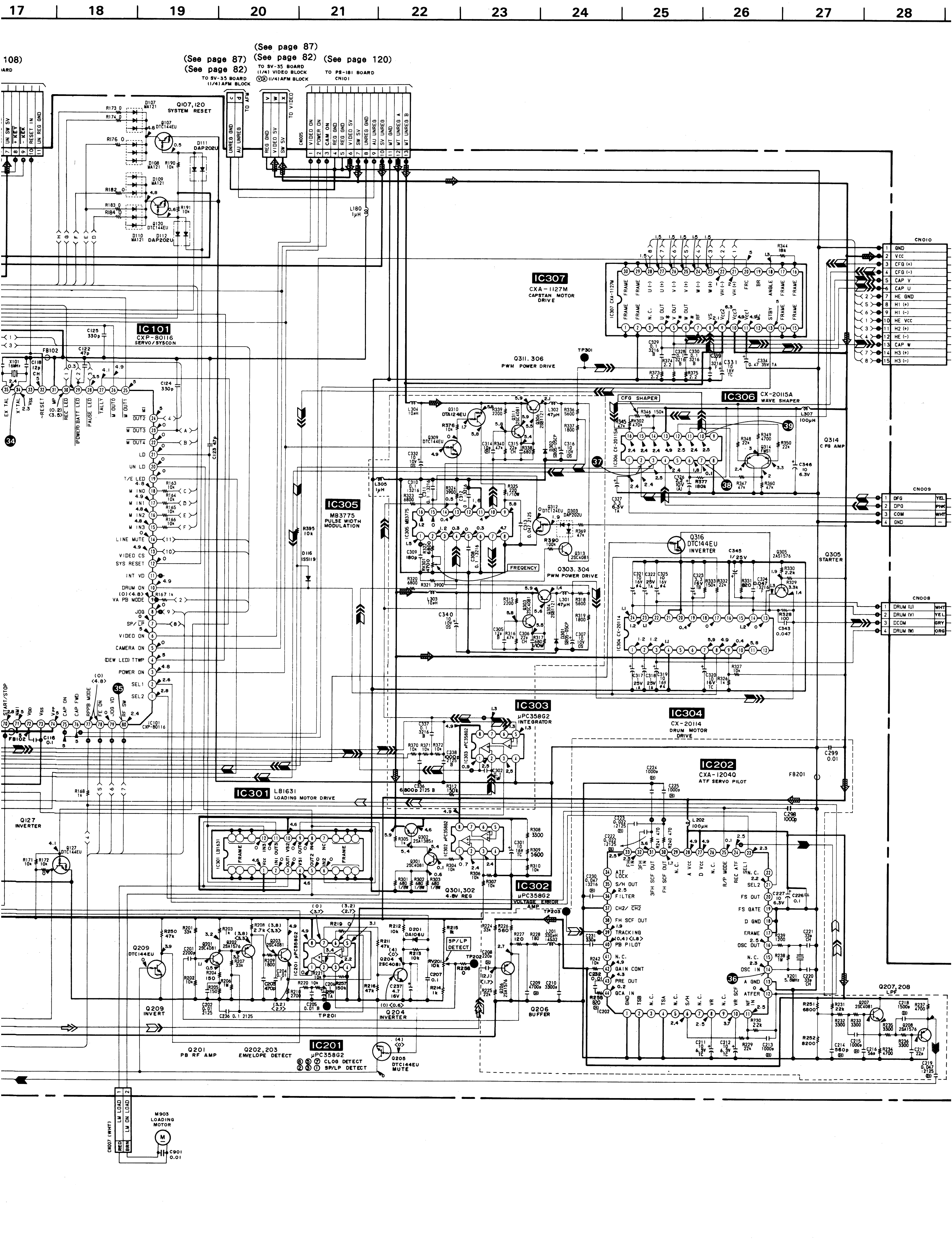


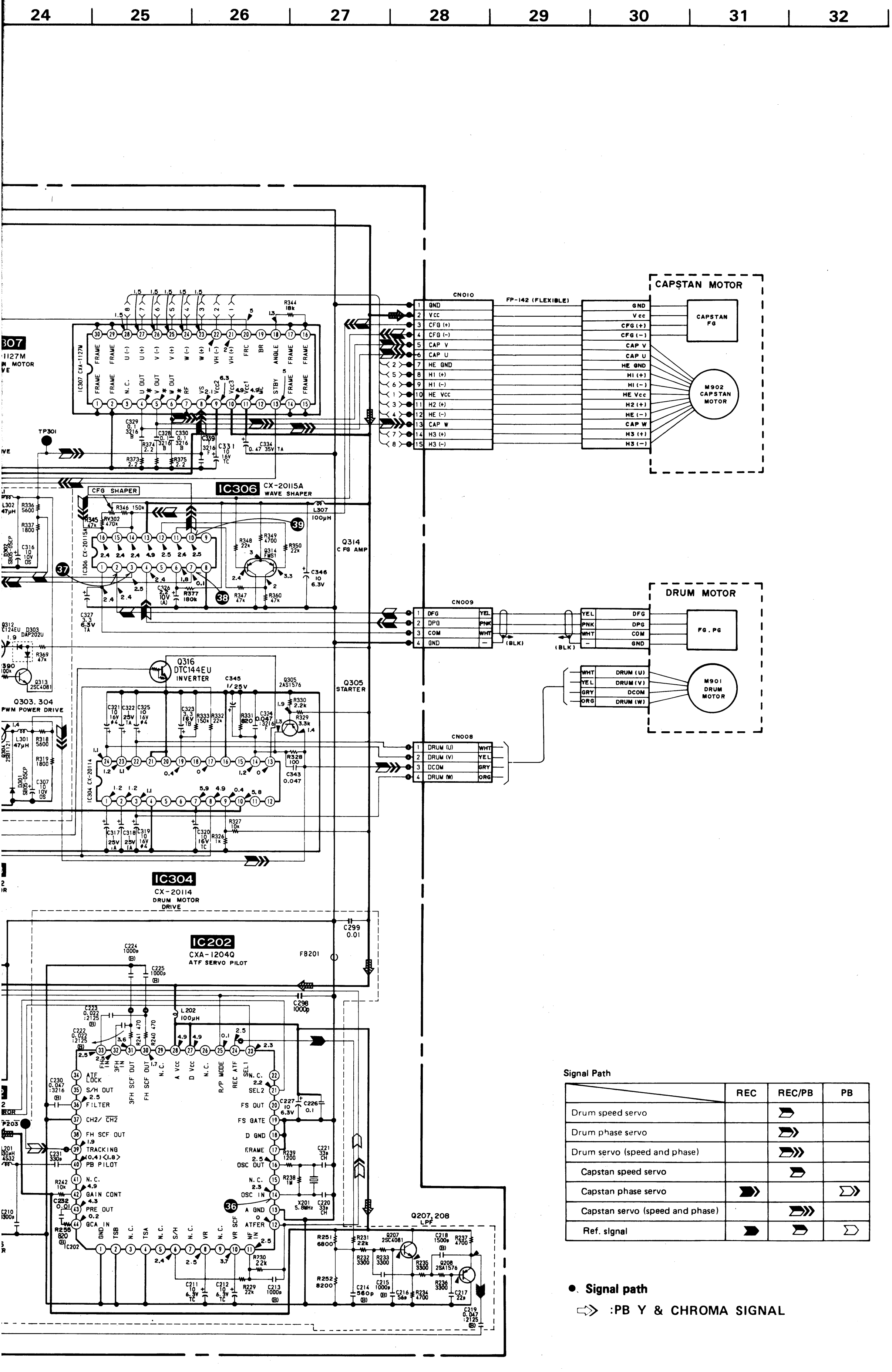
CN017
TEST B
COM (GND)
TEST A
(CHECK PIN)
Q101-106 – MATRIX INPUT
CN004
TO KB-6 BOARD CN001 FP-131 (FLEXIBLE)
(See page 114)
1 –
2 +
3 M IN 5
4 M IN 4
5 M OUT 0
6 M OUT 2
7 M OUT 1
8 POWER
9 GND
10 REG 5V
11 PAUSE LED
12 BATT (POWER LED)
13 REC LED
14 EJECT
15 M IN 0
16 DEW
R101 100k
R102 100k
R103 100k
R104 100k
Q103 XN4210 (1/2)
Q106 XN4210 (1/2)
Q105 XN4210 (1/2)
Q107 XN4210 (1/2)
TEST A
TEST B
MP HG
13/10
SP/LP
DEW
END
Q112 5V REG
Q113, 114 POWER ON SWITCH
C103 10 6.3V TB
D106 RD5.1M-B1
Q112 2SD1664-R
D103 DAP202
Q108, 10 WAKE U
CN006
TO UC-1 BOARD W001 FP-129 (FLEXIBLE)
(See page 115)
1 REEL LED
2 5V
3 S REEL FG
4 MODE SW2
5 MODE SW1
6 MODE SW0
7 MODTO (COM)
8 CC DOWN
9 END SENS
10 13/10
11 GND (COM)
12 MP HG
13 TOP END LED
14 TOP SENS
15 ME/MP
16 GND (COM)
17 REC PROOF
18 T REEL FG
R107 560 1/8W
D104 MA121
D105 DA106U
C102 0.01
R110 100k
R112 3900
C105 2.2 6.3V TA
C106 2.2 6.3V TA
R111 390k
R115 390k
R113 390k
R114 390k
IC102 μPC358G2 S REEL AMP T REEL AMP
C107 2.2 10V (A)
C108 2.2 10V (A)
R118 3900
R119 390k
R120 390k
R121 390k
R122 390k
Q116, 117, 128 – DEW DETECT –
R127 330k
R129 27k
R128 18k
Q116 FMS1
R132 15k
Q117 FMW2
R130 1M
R131 27k
R138 100k
DEW SENSOR
CN001 (WHT)
BLK DEW 1
WHT GND 2
RP GND
R135 100k
Q118 FMW
R136 10k
C109 10/6.3V TB
R137 100k
R139 470k
TAPE T
R142 100k
R140 100k
Q119 FMW
R141 10k
C110 10/6.3V TB
R143 100k
R144 470k
Q119 TAPE END DETECT
SV-35 BOARD (1/4) (SERVO/SY


12
13
14
15
16
17
18
19
20
21
22
(See page 108)
TO TT-20 BOARD
CN302
(See page 87)
(See page 82)
TO SV-35 BOARD
(1/4) AFM BLOCK
(See page 87)
(See page 82)
TO SV-35 BOARD
(1/4) VIDEO BLOCK
(1/4) AFM BLOCK
(See page 120)
TO PS-181 BOARD
CN101
TO SV-35 BOARD
(1/4) AFM BLOCK
SP901
SPEAKER
CN002 (WHT)
FP-150 (FLEXIBLE)
W003
Q107,120
SYSTEM RESET
Q101-106
-MATRIX INPUT-
S101
TV ← CAMERA → LINE
IC101
CXP-80116
SERVO/SYSCON
Q108,109
WAKE UP
Q110
BUFFER
Q122,123,124
SP/LP SWITCH
IC103
RESET
IC103 S-8054ALB
IC104 S-81350AG
IC104
S-81350AG
5V REG
Q116,117,128
-DEW DETECT-
Q118
TAPE TOP DETECT
Q119
TAPE END DETECT
Q127
INVERTER
Q125,126
STATE LOGIC
IC305
MB3775
PULSE WIDTH
MODULATION
IC301
LB1631
LOADING MOTOR DRIVE
Q301,302
4.8V REG
Q209
INVERT
Q201
PB RF AMP
Q202,203
ENVELOPE DETECT
IC201
μPC358G2
CLOG DETECT
SP/LP DETECT
Q204
INVERTER
Q205
DTC144EU
MUTE
M903
LOADING
MOTOR
CN007 (WHT)
TO SV-35 BOARD
(1/4) VIDEO BLOCK
(1/4) RF.PB BLOCK
(1/4) AFM BLOCK
(See page 87)
(See page 79)
(See page 81)

no mark: REC/PB mode (SP)
( ): REC mode (SP)
< >: PB mode (SP)
*: can not be measured

4) (SERVO/SYSTEM CONTROL)


17
18
19
20
21
22
23
24
25
26
27
28
(See page 87) TO SV-35 BOARD (1/4) AFM BLOCK
(See page 87)
(See page 82) TO SV-35 BOARD (1/4) VIDEO BLOCK
(See page 82)
(See page 120) TO PS-181 BOARD CN101
TO AFM
TO VIDEO
Q107, 120 SYSTEM RESET
D107 MA121
Q107 DTC144EU
D108 MA121
D109 MA121
D111 DAP202U
D110 MA121
D112 DAP202U
Q120 DTC144EU
L180 1μH
CN005
VIDEO ON
POWER ON
CAM ON
REG GND
VIDEO 5V
SW 5V
UNREG GND
AU UNREG
SV UNREG
MT UNREG A
MT UNREG B
UNREG GND
AU UNREG
REG GND
VIDEO 5V
SW 5V
IC101 CXP-80116 SERVO/SYSCON
IC307 CXA-1127M CAPSTAN MOTOR DRIVE
CN010
GND
VCC
CFG (+)
CFG (-)
CAP V
CAP U
HE GND
H1 (+)
H1 (-)
HE VCC
H2 (+)
HE (-)
CAP W
H3 (+)
H3 (-)
Q311, 306 PWM POWER DRIVE
TP301
IC306 CX-20115A WAVE SHAPER
CFG SHAPER
Q314 CFG AMP
CN009
DFG
DPG
COM
GND
YEL
PNK
WHT
IC305 MB3775 PULSE WIDTH MODULATION
FREQENCY
Q303, 304 PWM POWER DRIVE
Q316 DTC144EU INVERTER
Q305 2SA1576
Q305 STARTER
CN008
DRUM (U)
DRUM (V)
DCOM
DRUM (W)
WHT
YEL
GRY
ORG
IC304 CX-20114 DRUM MOTOR DRIVE
IC303 μPC358G2 INTEGRATOR
IC202 CXA-1204Q ATF SERVO PILOT
FB201
IC301 LB1631 LOADING MOTOR DRIVE
Q301, 302 4.8V REG
IC302 μPC358G2 VOLTAGE ERROR AMP
TP203
Q127 INVERTER
Q127 DTC144EU
Q209 DTC144EU
Q209 INVERT
Q201 PB RF AMP
Q202, 203 ENVELOPE DETECT
IC201 μPC358G2
⑤⑥⑦ CLOG DETECT
②③① SP/LP DETECT
Q205 DTC144EU MUTE
Q204 INVERTER
TP201
TP202
SP/LP DETECT
Q206 BUFFER
Q207, 208 LPF
CN007 (WHT)
LM LOAD
RED
BRN
M903 LOADING MOTOR
C901 0.01
LINE MUTE
VIDEO CS
SYS RESET
INT VD
DRUM ON
VA PB MODE
JOG
SP/LP
VIDEO ON
CAMERA ON
(DEW LED) TTWP
POWER ON
SEL1
SEL2
LD
UN LD
T/E LED
M IN0
M IN1
M IN2
M IN3
M OUT2
M OUT3
M OUT4
X101 16MHz
FB102
START/STOP
CAP FWD
RFPB MODE
FE ON
JOG VD
RF SW
ATF LOCK
S/H OUT
FILTER
CH2/CH2
FH SCF OUT
TRACKING
PB PILOT
GAIN CONT
PRE OUT
BCA IN
FS OUT
FS GATE
D GND
FRAME
OSC OUT
OSC IN
A GND
ATFER
X201 5.8MHz
L202 100μH
L307 100μH


24
25
26
27
28
29
30
31
32
IC307 CX-1127M
CAPSTAN MOTOR DRIVE
CN010
FP-142 (FLEXIBLE)
CAPSTAN MOTOR
CAPSTAN FG
M902 CAPSTAN MOTOR
GND
Vcc
CFG (+)
CFG (-)
CAP V
CAP U
HE GND
H1 (+)
H1 (-)
HE Vcc
H2 (+)
H2 (-)
CAP W
H3 (+)
H3 (-)
TP301
IC306 CX-20115A WAVE SHAPER
CFG SHAPER
Q314 C FG AMP
L307 100μH
CN009
DRUM MOTOR
FG, PG
DFG
DPG
COM
GND
YEL
PNK
WHT
(BLK)
M901 DRUM MOTOR
DRUM (U)
DRUM (V)
DCOM
DRUM (W)
GRY
ORG
CN008
Q316 DTC144EU INVERTER
Q305 2SA1576
Q305 STARTER
Q303, 304 PWM POWER DRIVE
Q313 2SC4081
D303 DAP202U
IC304 CX-20114 DRUM MOTOR DRIVE
IC202 CXA-12040 ATF SERVO PILOT
FB201
C299 0.01
C298 1000p
L202 100μH
ATF LOCK
S/H OUT
FILTER
CH2/ CH2
FH SCF OUT
TRACKING
PB PILOT
N. C.
GAIN CONT
PRE OUT
GCA IN
FS OUT
FS GATE
D GND
FRAME
OSC OUT
OSC IN
A GND
ATFER
SEL2
X201 5.8MHz
Q207, 208 LPF
Q207 2SC4081
Q208 2SA1576

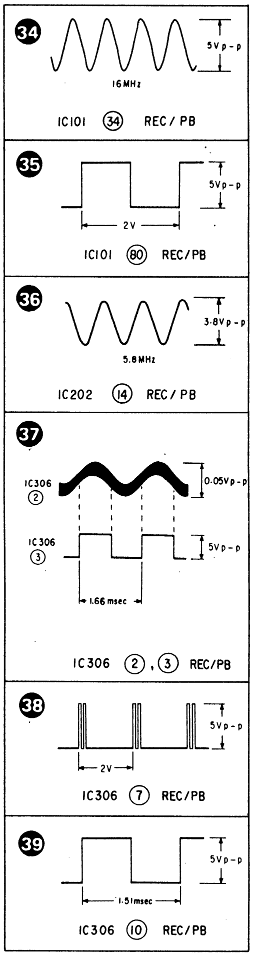
Signal Path

	REC	REC/PB	PB
Drum speed servo		➤	
Drum phase servo		➤»	
Drum servo (speed and phase)		➤»»	
Capstan speed servo		➤	
Capstan phase servo	➤»		▷»
Capstan servo (speed and phase)		➤»»	
Ref. signal	➤	➤	▷

- **Signal path**

⇨» :PB Y & CHROMA SIGNAL

SV-35 BOARD (SERVO / SYSCON)

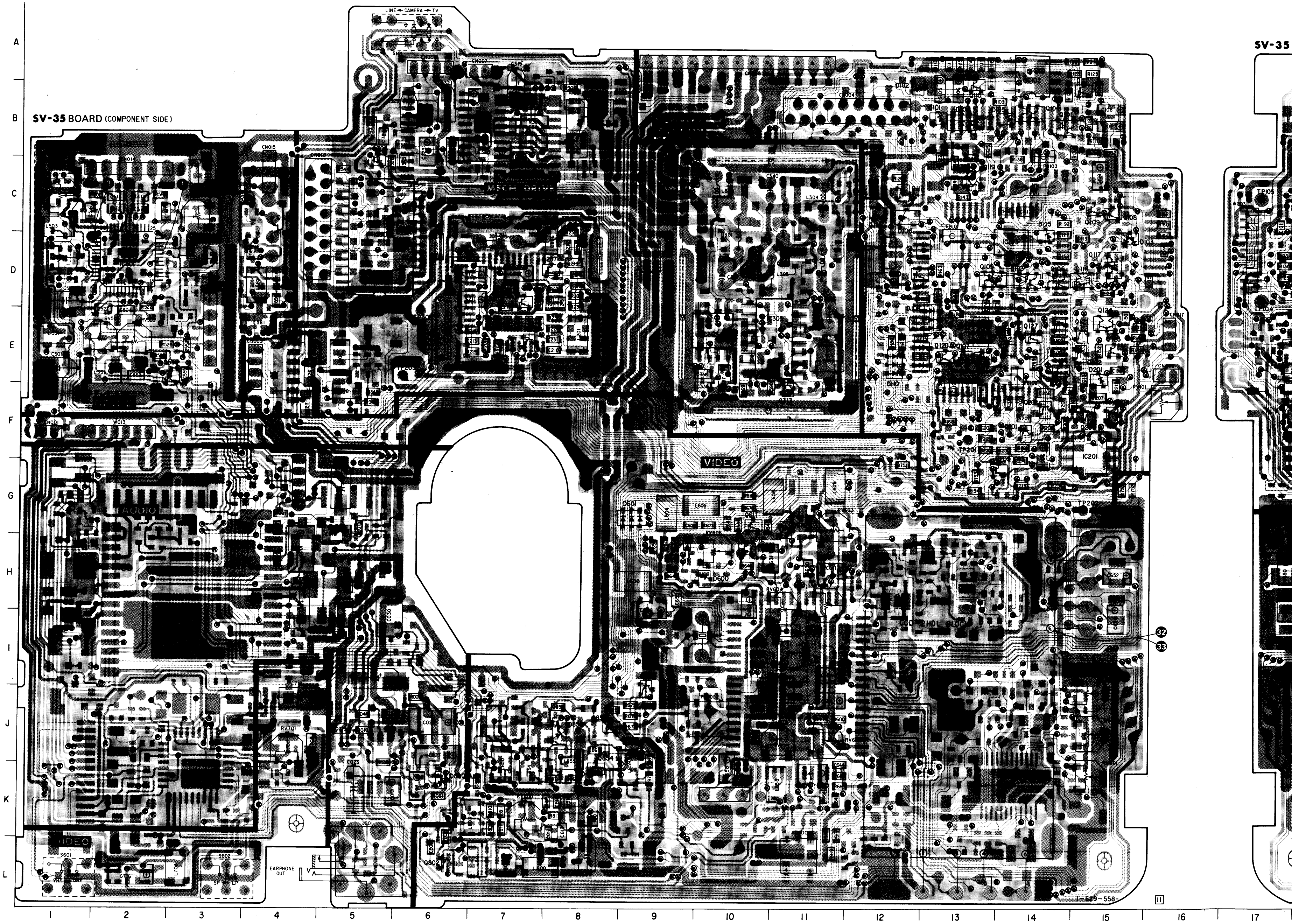


SV-35 (SERVO/SYSTEM CONTROL/MECHANISM DRIVE) PRINTED WIRING BOARD

– Ref. No. SV-35 BOARD : 2000 series –

SV-35 BOARD

CN001	F-1
CN002	E-16
CN004	B-11
CN005	A-10
CN006	B-19
CN007	A-7
CN008	A-6
CN009	E-4
CN010	C-4
CN014	C-2
CN015	C-4
CN016	J-31
CN017	E-16
CN018	E-3
D001	J-31
D002	G-31
D003	J-27
D080	K-6
D101	B-13
D102	A-12
D103	D-15
D104	B-13
D105	B-14
D106	C-12
D107	E-13
D108	E-13
D109	E-12
D110	E-12
D111	E-13
D112	E-14
D115	C-14
D201	E-15
D301	C-22
D302	C-22
D303	E-22
D600	H-10
D601	G-9
D850	J-8
D900	I-19
D901	I-19
HIC001	H-30
IC001	K-27
IC101	D-19
IC102	A-14
IC103	D-14
IC104	D-12
IC201	F-15
IC202	D-25
IC301	B-25
IC302	B-24
IC303	E-10
IC304	B-27
IC305	E-11
IC306	E-28
IC307	C-5
IC501	D-2
IC600	I-22
IC701	K-30
IC900	K-19
Q001	G-31
Q002	J-26
Q003	G-31
Q004	I-27
Q005	I-27
Q051	H-30
Q080	J-27
Q081	J-27
Q101	B-14
Q102	B-19
Q103	D-14
Q104	B-14
Q105	D-13
Q106	D-14
Q107	E-13
Q108	C-15
Q109	C-15
Q110	A-13
Q111	E-13
Q112	C-20
Q113	C-12
Q114	C-12
Q115	D-12
Q116	D-15
Q117	D-15
Q118	C-18
Q119	C-13
Q120	E-13
Q121	E-15
Q122	E-15
Q123	E-15
Q124	E-15
Q125	E-14
Q126	E-14
Q127	E-14
Q128	D-18
Q201	F-14
Q202	F-14
Q203	F-15
Q204	F-15
Q205	G-19
Q206	E-7
Q207	D-8
Q208	D-7
Q209	G-14
Q301	A-25
Q302	B-8
Q303	D-23
Q304	C-22
Q305	C-5
Q306	C-22
Q309	D-22
Q310	D-22
Q311	C-21
Q312	E-22
Q313	F-11
Q314	F-27
Q316	B-27
Q501	D-31
Q503	E-30
Q551	E-30
Q552	E-3
Q581	D-29
Q582	C-4
Q604	H-20
Q605	H-20
Q606	H-19
Q607	H-19
Q608	H-19
Q609	H-19
Q610	H-23
Q611	G-10
Q612	H-10
Q613	G-11
Q614	H-23
Q615	J-23
Q616	K-22
Q617	K-21
Q701	L-30
Q702	L-30
Q703	J-30
Q704	J-31
Q800	L-24
Q801	K-25
Q802	L-6
Q803	K-26
Q804	K-26
Q805	K-25
Q806	L-25
Q850	J-25
Q851	K-25
Q853	J-24
Q854	K-8
Q855	K-24
Q856	I-9
Q857	J-8
Q900	J-19
Q902	L-19
Q903	K-21
Q904	K-20
Q905	J-19
RV101	F-16
RV102	F-18
RV103	E-18
RV104	E-18
RV201	F-18
RV301	E-11
RV302	E-27
RV501	C-3
RV502	C-1
RV503	D-1
RV504	E-2
RV505	E-2
RV600	J-11
RV601	H-11
RV602	J-11
RV603	G-11
RV604	H-11
RV605	I-11
RV606	H-10
RV701	J-4
RV800	K-7
RV901	K-15
RV902	J-15
RV903	I-15
TP104	D-17
TP105	C-17
TP201	F-13
TP202	G-15
TP203	E-6
TP301	E-6
W003	C-17
W011	G-4
W012	G-27
W013	F-2



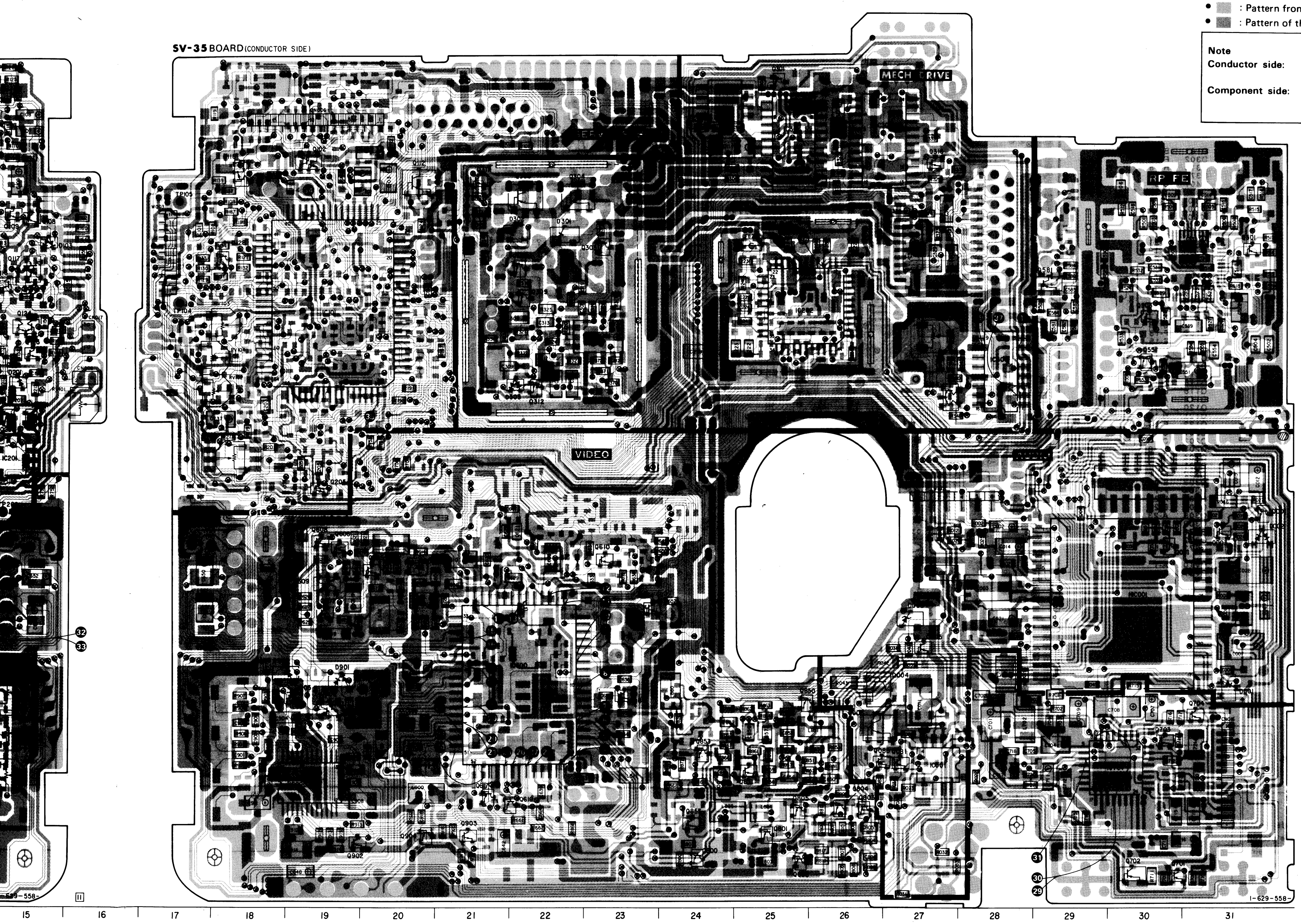
Note (Printed Wiring Board)

- ▨ : Pattern from the side which enables seeing.
- ▨ : Pattern of the rear side.

Note

Conductor side:	Parts on the conductor side being seen from the conductor are stated.
Component side:	Parts on the component side being seen from the component are stated.

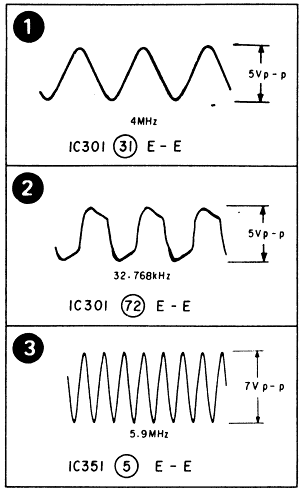
SV-35 BOARD (CONDUCTOR SIDE)


MECH DRIVE
RP FE
VIDEO
IC101
IC001
D301
D901
Q312
Q902
Q903
Q702
Q701
TP105
TP104
IC201
32
33
31
30
29
1-629-558-11
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31

TT-20 (TUNER/TIMER), LI-11 (LITHIUM BATTERY) PRINTED WIRING BOARD

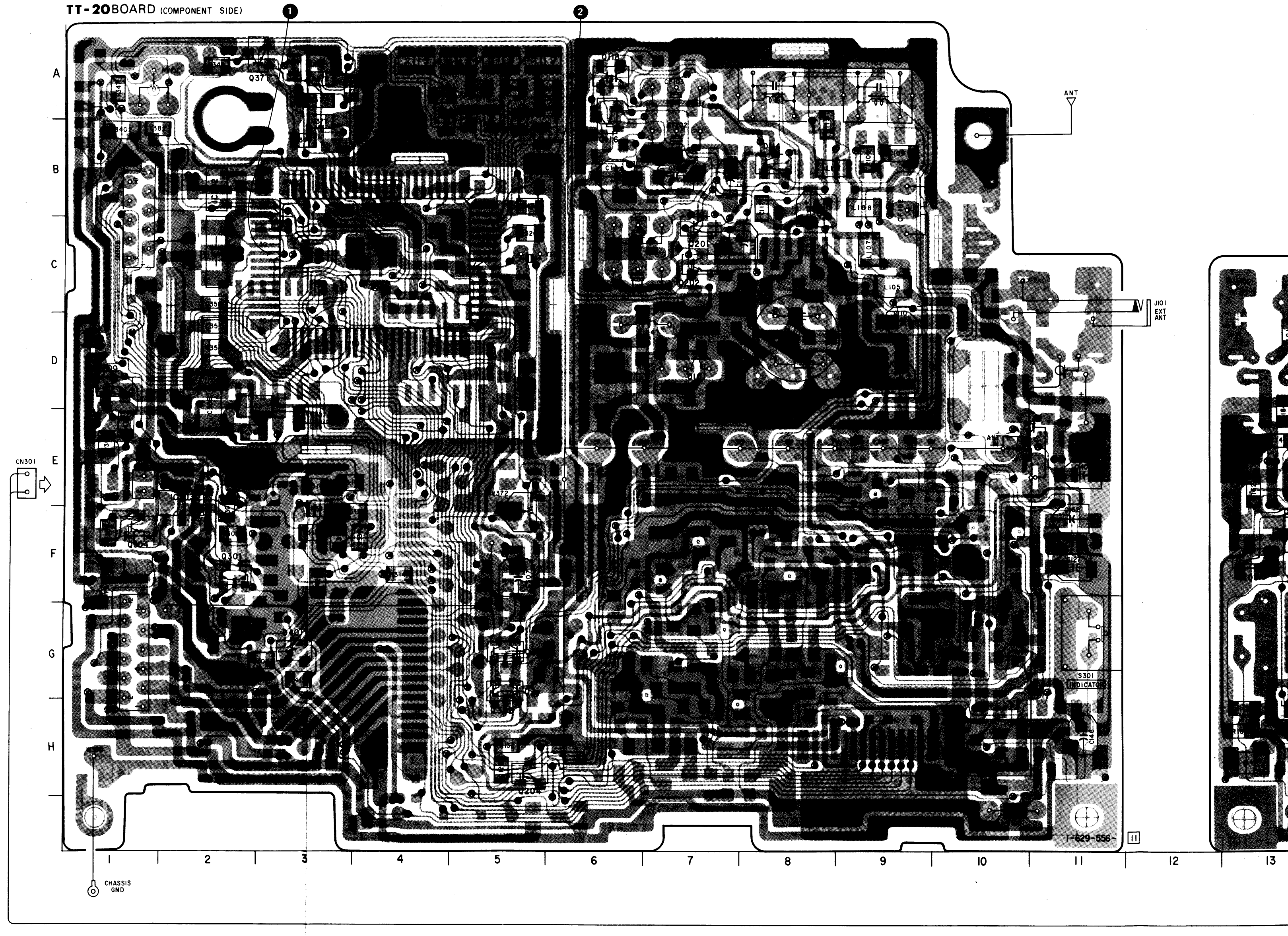
– Ref. No. TT-20 BOARD : 1000 series –

TT-20 BOARD


❶
5Vp-p
4MHz
IC301 ㉛ E-E
❷
5Vp-p
32.768kHz
IC301 ㊷ E-E
❸
7Vp-p
5.9MHz
IC351 ⑤ E-E

TT-20 BOARD

CN301	E-1
CN302	C-1
CN303	G-20
CN305	G-1
CN306	H-15
CV301	D-5
CV351	E-3
D101	B-16
D302	F-22
D310	H-18
D371	E-19
D401	G-3
IC101	F-17
IC102	G-15
IC301	C-4
IC302	B-2
IC303	E-2
IC351	D-21
IC371	D-19
IC372	A-21
Q101	D-7
Q102	G-15
Q103	G-17
Q104	F-17
Q105	H-17
Q106	H-17
Q107	B-18
Q109	F-13
Q110	E-15
Q111	E-14
Q112	G-13
Q113	F-13
Q114	B-8
Q115	A-11
Q116	B-6
Q118	A-6
Q120	G-16
Q121	H-16
Q122	F-16
Q201	C-7
Q202	C-7
Q203	G-18
Q204	H-5
Q301	F-2
Q302	F-21
Q303	E-23
Q304	F-1
Q305	F-23
Q306	B-23
Q308	A-23
Q309	D-1
Q371	A-2
Q372	G-5
Q373	G-5
RV101	A-1
RV372	F-5


TT-20BOARD (COMPONENT SIDE)
❶
❷
A
B
C
D
E
F
G
H
1
2
3
4
5
6
7
8
9
10
11
12
13
CN301
CHASSIS GND
ANT
J101 EXT ANT
Q371
L105
L107
L108
Q201
Q301
Q372
Q204
S301 INDICATOR
1-629-556-11

Note (Printed Wiring Board)

- ▨ : Pattern from the side which enables seeing.
- ▨ : Pattern of the rear side.

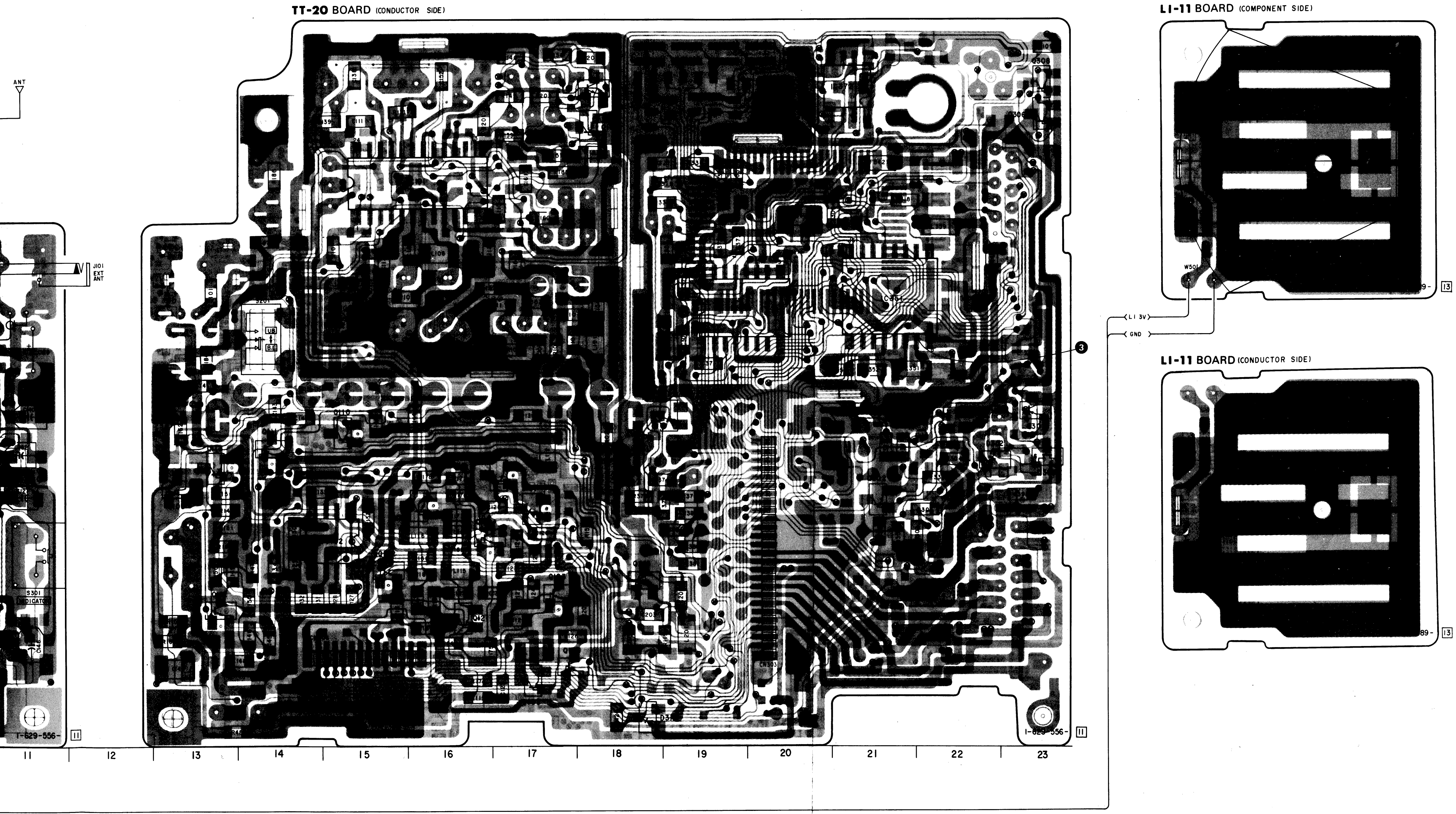
Note

Conductor side:	Parts on the conductor side being seen from the conductor are stated.
Component side:	Parts on the component side being seen from the component are stated.

TT-20 BOARD (CONDUCTOR SIDE)

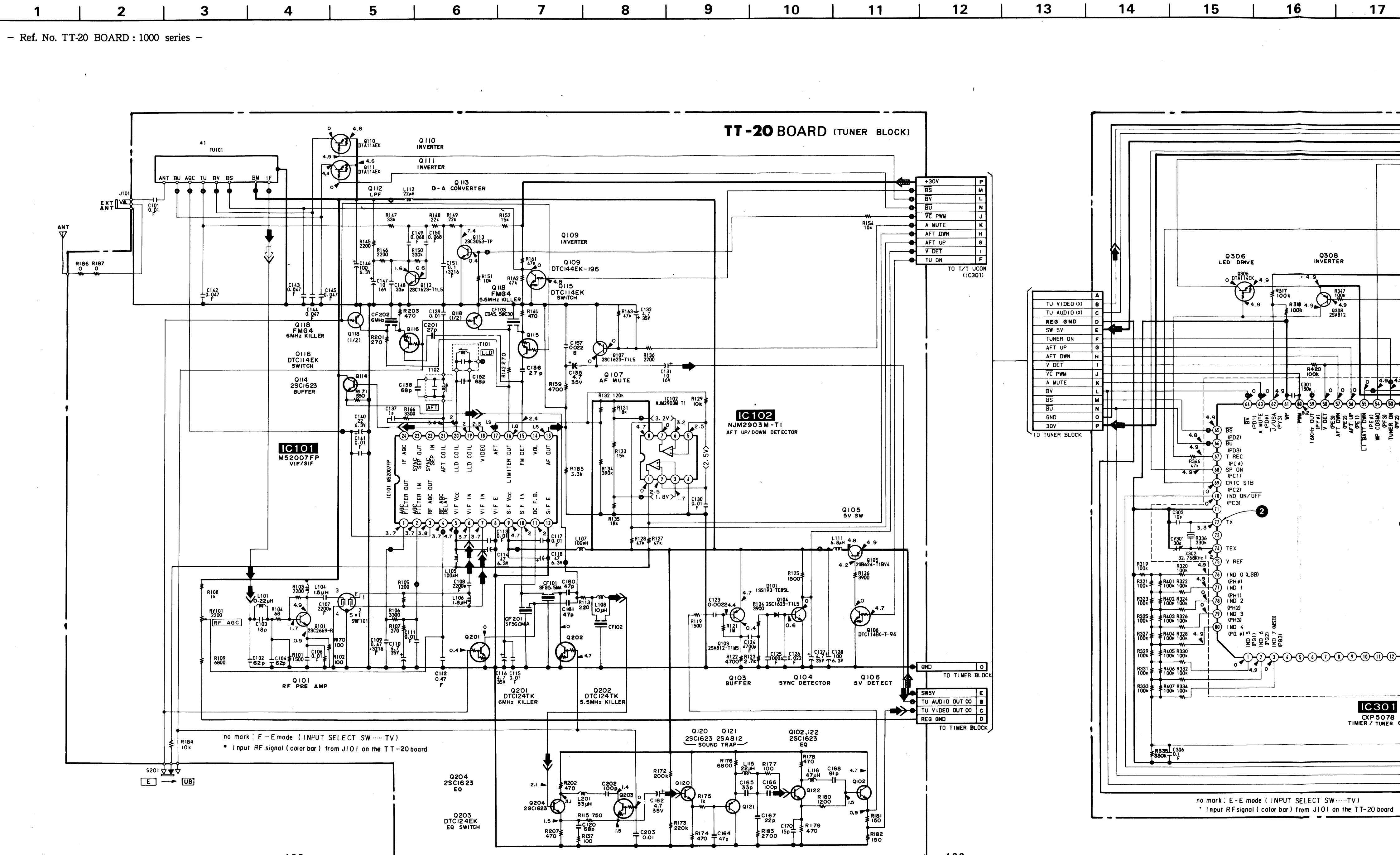
LI-11 BOARD (COMPONENT SIDE)

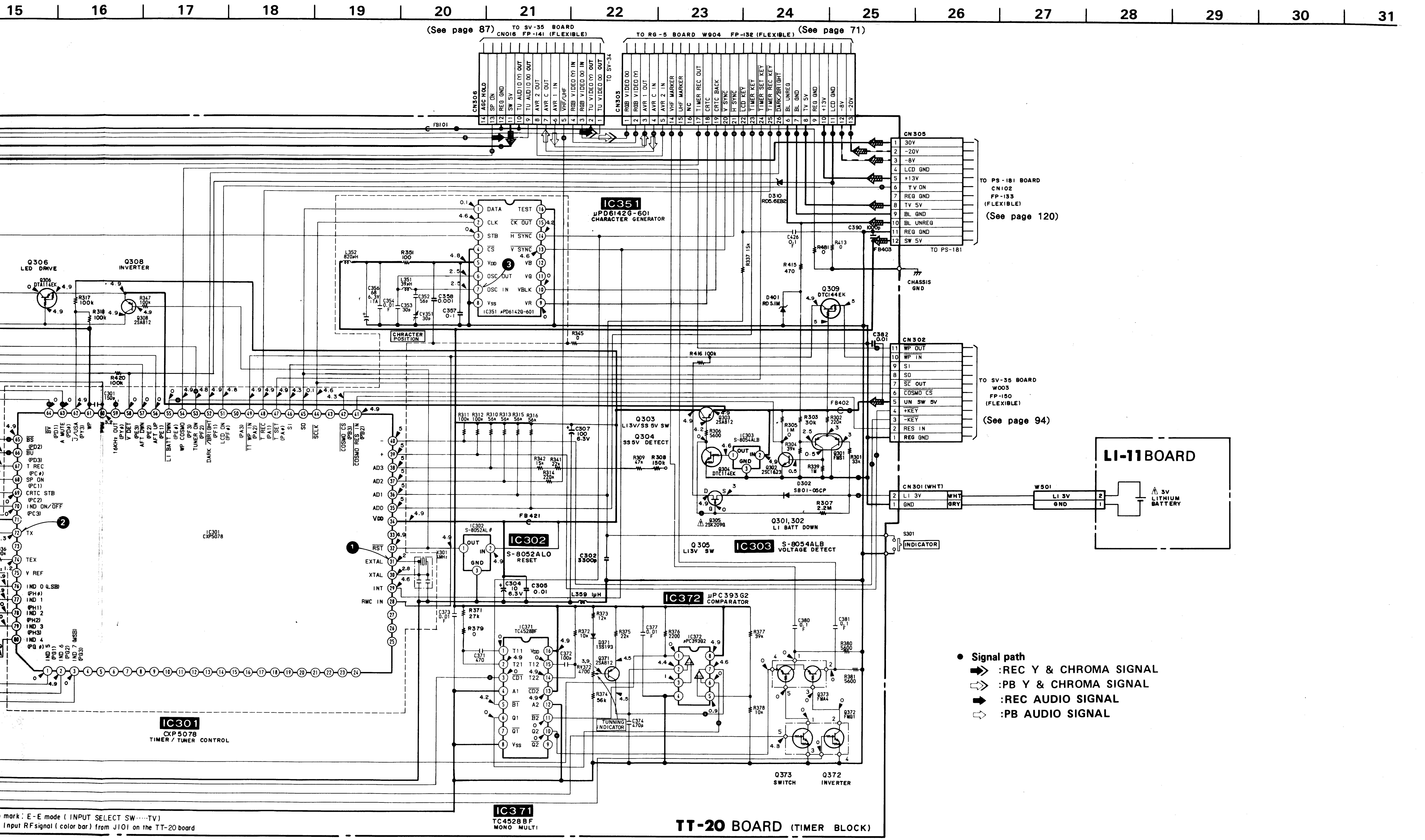
LI-11 BOARD (CONDUCTOR SIDE)


ANT
J101
EXT
ANT
S201
S301
INDICATOR
UB
B.E
Q110
CN301
D301
1-629-556- 11
1-629-556- 11
W501
LI 3V
GND
3
89- 13
89- 13
11
12
13
14
15
16
17
18
19
20
21
22
23

TT-20 (TUNER/TIMER), LI-11 (LITHIUM BATTERY) SCHEMATIC DIAGRAM

– Ref. No. TT-20 BOARD : 1000 series –


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
TT-20 BOARD (TUNER BLOCK)
TU101
ANT BU AGC TU BV BS BM IF
EXT ANT
J101
ANT
R186 R187
Q110 DTA114EK
Q110 INVERTER
Q111 DTA114EK
Q111 INVERTER
Q113 D-A CONVERTER
Q112 LPF
L112 22μH
Q113 2SC3053-TP
Q112 2SC1623-T1L5
Q109 INVERTER
Q109 DTC144EK-196
Q115 DTC114EK SWITCH
Q118 FMG4 5.5MHz KILLER
Q118 FMG4 6MHz KILLER
Q116 DTC114EK SWITCH
Q114 2SC1623 BUFFER
CF202 6MHz
CF103 CDA5.5MC30
T101
T102
LLD
AFT
Q107 AF MUTE
Q107 2SC1623-T1L5
IC101 M52007FP VIF/SIF
IF AGC
SYNC SEP OUT
SYNC SEP IN
AFT COIL
LLD COIL
LLD COIL
VIDEO
AFT
LIMITER OUT
FM DET
VOL
AF OUT
AGC FILTER OUT
AGC FILTER IN
RF AGC OUT
RF AGC DELAY
VIF Vcc
VIF IN
VIF IN
VIF E
SIF Vcc
SIF IN
DC F.B.
SIF E
IC102 NJM2903M-T1
IC102 NJM2903M-T1 AFT UP/DOWN DETECTOR
+30V
BS
BV
BU
VC PWM
A MUTE
AFT DWN
AFT UP
V DET
TU ON
P
M
L
N
J
K
H
G
I
F
TO T/T UCON (IC301)
Q105 5V SW
Q105 2SB624-T1BV4
L111 6.8μH
D101 1SS193-TE85L
Q104 2SC1623-T1L5
Q103 2SA812-T1M5
Q106 DTC114EK-T-96
Q103 BUFFER
Q104 SYNC DETECTOR
Q106 5V DETECT
GND
O
TO TIMER BLOCK
SW5V
TU AUDIO OUT
TU VIDEO OUT
REG GND
E
B
C
D
TO TIMER BLOCK
Q101 2SC2669-R
Q101 RF PRE AMP
RF AGC
RV101 2200
L101 0.22μH
SWF101
CF101 SFS5.5MA
CF201 SFS6.0MA
CF102
Q201 DTC124TK 6MHz KILLER
Q202 DTC124TK 5.5MHz KILLER
Q120 2SC1623
Q121 2SA812
SOUND TRAP
Q102,122 2SC1623 EQ
Q204 2SC1623 EQ
Q203 DTC124EK EQ SWITCH
S201
E
UB
no mark : E - E mode (INPUT SELECT SW ···· TV)
• Input RF signal (color bar) from J101 on the TT-20 board
TU VIDEO (X)
TU AUDIO (X)
REG GND
SW 5V
TUNER ON
AFT UP
AFT DWN
V DET
VC PWM
A MUTE
BV
BS
BU
GND
30V
TO TUNER BLOCK
Q306 LED DRIVE
Q306 DTA114EK
Q308 INVERTER
Q308 2SA812
R420 100k
BS (PD2)
BU (PD3)
T REC (PC#)
SP ON (PC1)
CRTC STB (PC2)
IND ON/OFF (PC3)
TX
TEX
V REF
X302 32.768kHz
IND 0 (LSB) (PH#)
IND 1 (PH1)
IND 2 (PH2)
IND 3 (PH3)
IND 4 (PG#)
IND 5 (PG1)
IND 6 (PG2)
IND 7 (MSB) (PG3)
IC301 CXP5078 TIMER / TUNER
no mark : E - E mode (INPUT SELECT SW ···· TV)
* Input RF signal (color bar) from J101 on the TT-20 board


15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
(See page 87) TO SV-35 BOARD CN016 FP-141 (FLEXIBLE)
TO RG-5 BOARD W904 FP-132 (FLEXIBLE) (See page 71)
CN306
AGC HOLD
SP ON
REG GND
SW 5V
TU AUDIO (Y) OUT
TU AUDIO (X) OUT
AVR 2 OUT
AVR C OUT
AVR 1 IN
VHF/UHF
RGB VIDEO (Y) IN
RGB VIDEO (X) IN
TU VIDEO (Y) OUT
TU VIDEO (X) OUT
TO SV-34
CN303
RGB VIDEO (X)
RGB VIDEO (Y)
AVR 1 OUT
AVR C IN
AVR 2 IN
VHF MARKER
UHF MARKER
NC
TIMER REC OUT
CRTC
CRTC BACK
V SYNC
H SYNC
LCD KEY
TIMER KEY
TIMER SET KEY
TIMER REC KEY
DARK/BRIGHT
BL UNREG
BL GND
TV 5V
REG GND
+13V
LCD GND
-8V
-20V
FB101
CN305
30V
-20V
-8V
LCD GND
+13V
TV ON
REG GND
TV 5V
BL GND
BL UNREG
REG GND
SW 5V
TO PS-181 BOARD CN102 FP-133 (FLEXIBLE)
(See page 120)
TO PS-181
C390 1000p
FB403
CHASSIS GND
IC351
μPD6142G-601 CHARACTER GENERATOR
DATA
CLK
STB
CS
VDD
OSC OUT
OSC IN
VSS
TEST
CK OUT
H SYNC
V SYNC
VB
VG
VBLK
VR
IC351 μPD6142G-601
L352 820μH
R351 100
L351 39μH
C356 68 6.3V :TA
C354 0.01 F
C353 30p
C352 56p
C358 0.001
CV351 30p
C357 0.1
CHRACTER POSITION
R345 0
D310 RD5.6EB2
C426 0.1 F
R481 0
R413 0
R337 15k
R415 470
D401 RD5.1M
Q309 DTC144EK
Q306 LED DRIVE
Q306 DTA114EK
Q308 INVERTER
R317 100k
R318 100k
R347 100k
Q308 2SA812
R420 100k
C301 150p
CN302
WP OUT
WP IN
SI
SO
SC OUT
COSMO CS
UN SW 5V
+KEY
-KEY
RES IN
REG GND
TO SV-35 BOARD W003 FP-150 (FLEXIBLE)
(See page 94)
C382 0.01
R416 100k
FB402
BS (PD2)
BU (PD3)
T REC (PC#)
SP ON (PC1)
CRTC STB (PC2)
IND ON/OFF (PC3)
TX
TEX
V REF
IND 0 (LSB) (PH#)
IND 1 (PH1)
IND 2 (PH2)
IND 3 (PH3)
IND 4 (PG#)
IND 5 (PG1)
IND 6 (PG2)
IND 7 (MSB) (PG3)
BV (PD1)
A MUTE (PD#)
J/USA (PY3)
WP
16kHz OUT (PY#)
V DET (PE3)
AFT DOWN (PE2)
AFT UP (PE1)
LI BATT DWN (PE#)
WP (COSMO) (PF3)
TUNER ON (PF2)
DARK/BRIGHT (PF1)
LCD ON (PF#)
(PA3)
TT WP IN (PA2)
T REC (PA1)
T SET (PA#)
SI
SO
SCLK
COSMO CS (PB3)
COSMO RES IN (PB2)
AD3
AD2
AD1
ADD
VDD
RST
EXTAL
XTAL
INT
RMC IN
IC301 CXP5078
X301 4MHz
IC302 S-8052AL#
OUT
IN
GND
IC302
S-8052ALO RESET
FB421
C302 3300p
C304 10 6.3V
C305 0.01
C307 100 6.3V
L359 1μH
R311 100k
R312 100k
R310 56k
R313 56k
R315 56k
R316 56k
R342 15k
R341 22k
R314 220k
R309 47k
R308 150k
Q303 LI3V/SS 5V SW
Q304 SS5V DETECT
Q303 2SA812
R306 5600
IC303 S-8054ALB
Q304 DTC114EK
Q302 2SC1623
R305 1M
R304 39k
R303 30k
R302 220k
Q301 FMS1
R301 33k
R339 1M
D302 S801-05CP
R307 2.2M
Q305 2SK2098
Q301, 302 LI BATT DOWN
Q305 LI3V SW
IC303
S-8054ALB VOLTAGE DETECT
CN301 (WHT)
LI 3V
GND
WHT
GRY
W501
LI 3V
GND
LI-11 BOARD
⚠ 3V LITHIUM BATTERY
S301
INDICATOR
IC372
μPC393G2 COMPARATOR
IC371 TC4528BF
T11
T21
CD1
A1
B1
Q1
Q1
VSS
VDD
T12
T22
CD2
A2
B2
Q2
Q2
C373 0.01 F
R371 27k
R379 0
C371 470
C372 100p
R372 10k
R373 12k
D371 1SS193
RV372 4700
Q371 2SA812
R374 56k
R375 22k
C377 0.01 F
R376 2200
IC372 μPC393G2
R377 39k
TUNNING INDICATOR
C374 470p
C380 0.1 F
C381 0.1 F
R380 5600
R381 5600
R378 10k
Q373 FMA4
Q372 FMG1
Q373 SWITCH
Q372 INVERTER
IC301
CXP5078 TIMER/TUNER CONTROL
IC371
TC4528BF MONO MULTI
TT-20 BOARD (TIMER BLOCK)
● Signal path
:REC Y & CHROMA SIGNAL
:PB Y & CHROMA SIGNAL
:REC AUDIO SIGNAL
:PB AUDIO SIGNAL

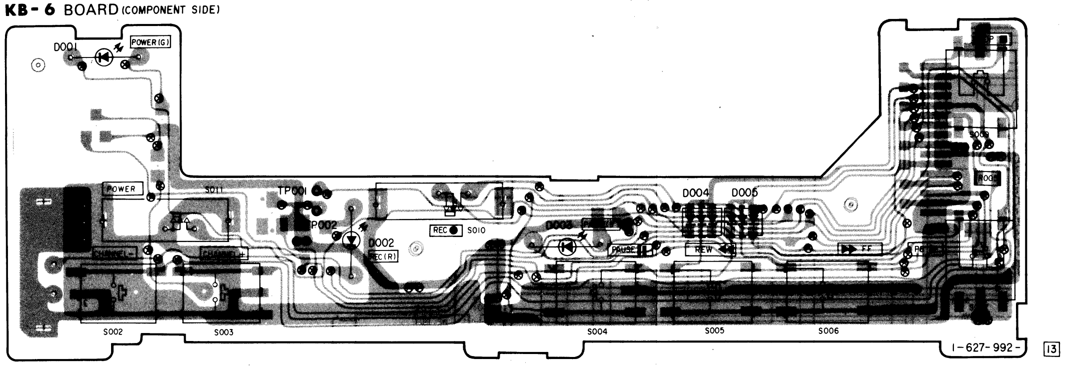
mark : E-E mode (INPUT SELECT SW·····TV)

Input RF signal (color bar) from J101 on the TT-20 board

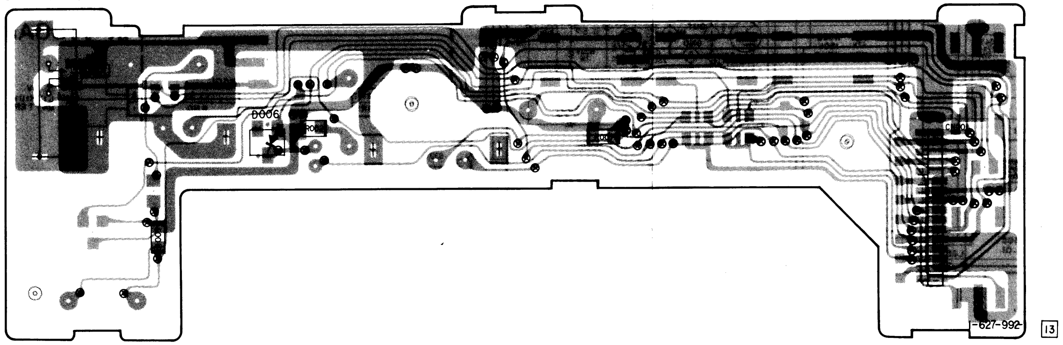
KB-6 (FUNCTION SWITCH), KB-7 (BRIGHT/VOLUME), JK-34 (VIDEO, AUDIO IN/OUT), CA-15 (CAMERA IN), UC-1 (TERMINAL), FP-89, FP-90 PRINTED WIRING BOARD

– Ref. No. UC-1 BOARD : 1000 series, KB-6, KB-7, JK-34, CA-15 BOARDS : 3000 series, FP-89 BOARD : 4000 series, FP-90 BOARD : 5000 series –

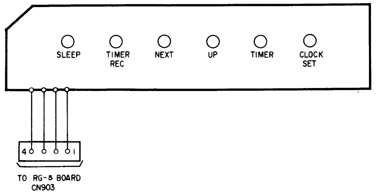
KB-6 BOARD (COMPONENT SIDE)


D001
POWER(G)
POWER
S011
TP001
TP002
D002
REC(R)
REC ●
S010
D003
D004
D005
PAUSE
REW
FF
CHANNEL−
CHANNEL+
S002
S003
S004
S005
S006
S009
1-627-992-
13

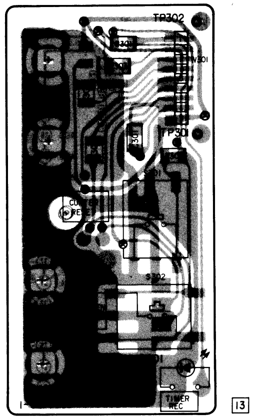
KB-6 BOARD (CONDUCTOR SIDE)


D006
-627-992-
13

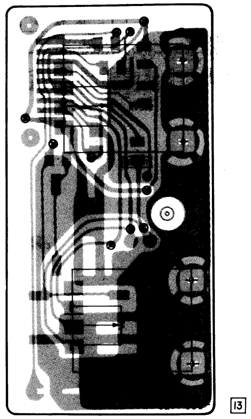
SW UNIT


SLEEP
TIMER REC
NEXT
UP
TIMER
CLOCK SET
4
1
TO RG-8 BOARD CN903

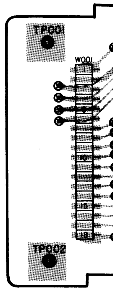
KB-7 BOARD (COMPONENT SIDE)


TP302
TP301
TIMER REC
13

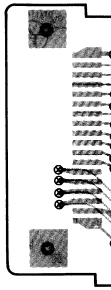
KB-7 BOARD (CONDUCTOR SIDE)



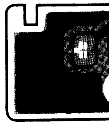
UC-1 BOARD


TP001
W001
TP002

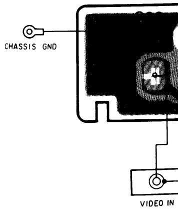
UC-1 BOARD



JK-34 BOAR



JK-34 BOAR


CHASSIS GND
VIDEO IN

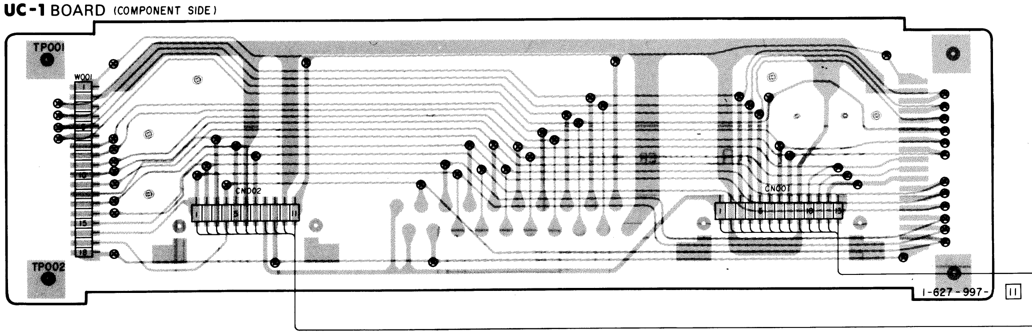
Note (Printed Wiring Board)

- ▨ : Pattern from the side which enables seeing.
- ■ : Pattern of the rear side.

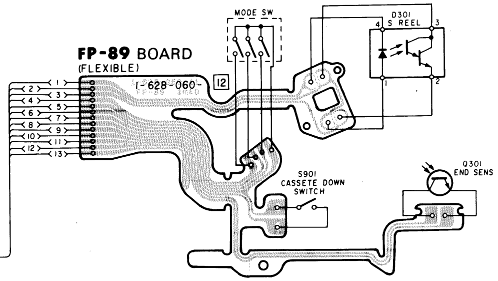
Note

Conductor side:	Parts on the conductor side being seen from the conductor are stated.
Component side:	Parts on the component side being seen from the component are stated.

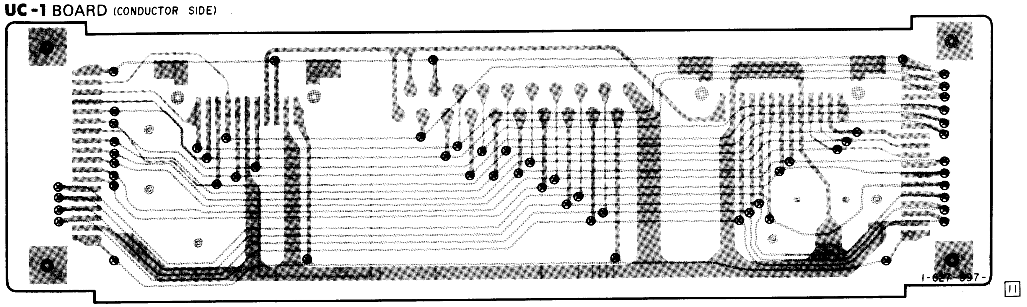
UC-1 BOARD (COMPONENT SIDE)


TP001
W001
CN002
CN001
TP002
1-627-997-
11

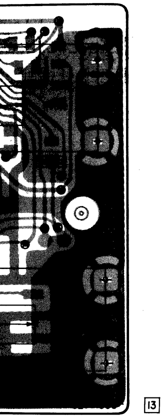
FP-89 BOARD (FLEXIBLE)


MODE SW
D301
S REEL
4
3
1
2
1-628-060-
12
1
2
3
4
5
6
7
8
9
10
11
12
13
S901
CASSETE DOWN
SWITCH
Q301
END SENS

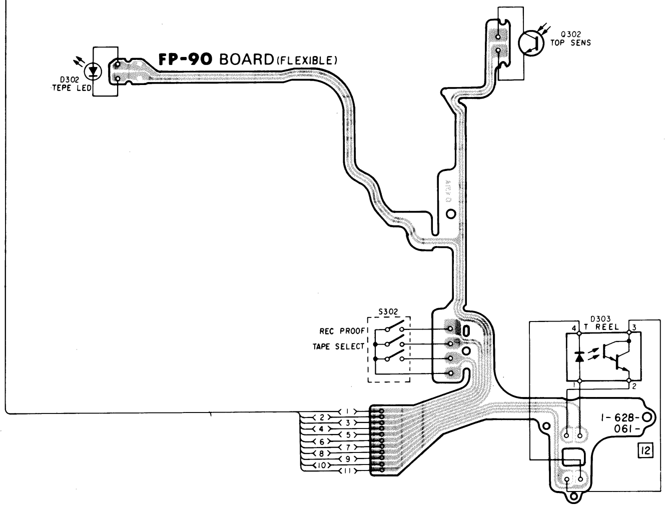
UC-1 BOARD (CONDUCTOR SIDE)



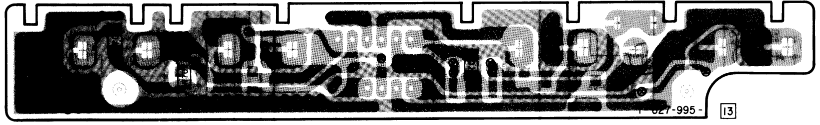
ARD (CONDUCTOR SIDE



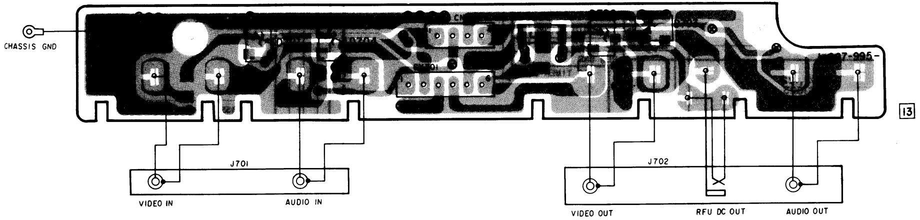
FP-90 BOARD (FLEXIBLE)


D302
TEPE LED
Q302
TOP SENS
S302
REC PROOF
TAPE SELECT
D303
T REEL
4
3
1
2
1
2
3
4
5
6
7
8
9
10
11
1-628-061-
12

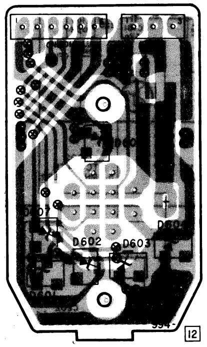
JK-34 BOARD (CONDUCTOR SIDE)



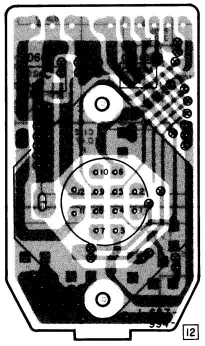
JK-34 BOARD (COMPONENT SIDE)


CHASSIS GND
1-627-995-
13
J701
VIDEO IN
AUDIO IN
J702
VIDEO OUT
RFU DC OUT
AUDIO OUT

CA-15 BOARD (COMPONENT SIDE)


D607
D602
D603
12

CA-15 BOARD (CONDUCTOR SIDE)

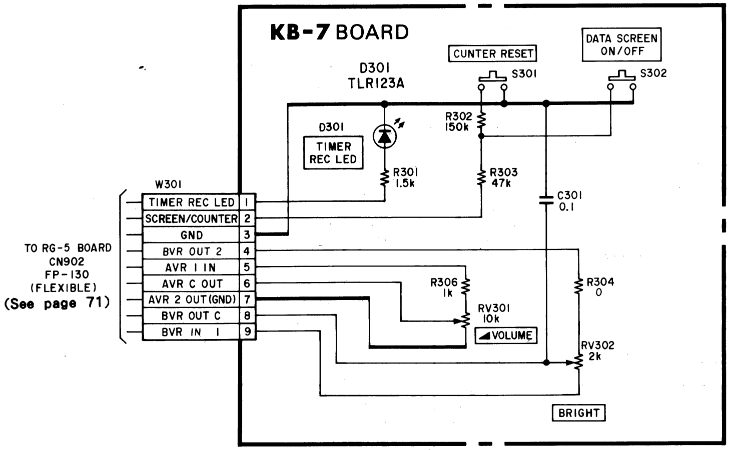


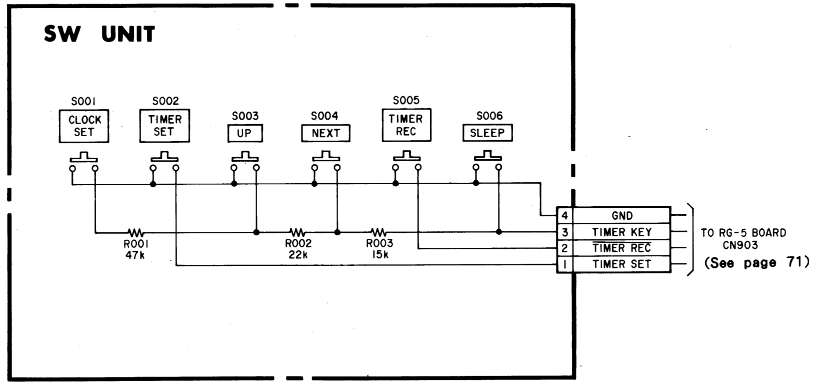
KB-6 (FUNCTION SWITCH), KB-7 (BRIGHT/VOLUME), JK-34 (VIDEO, AUDIO IN/OUT), CA-15 (CAMERA IN), UC-1 (TERMINAL), FP-89, FP-90 SCHEMATIC DIAGRAM

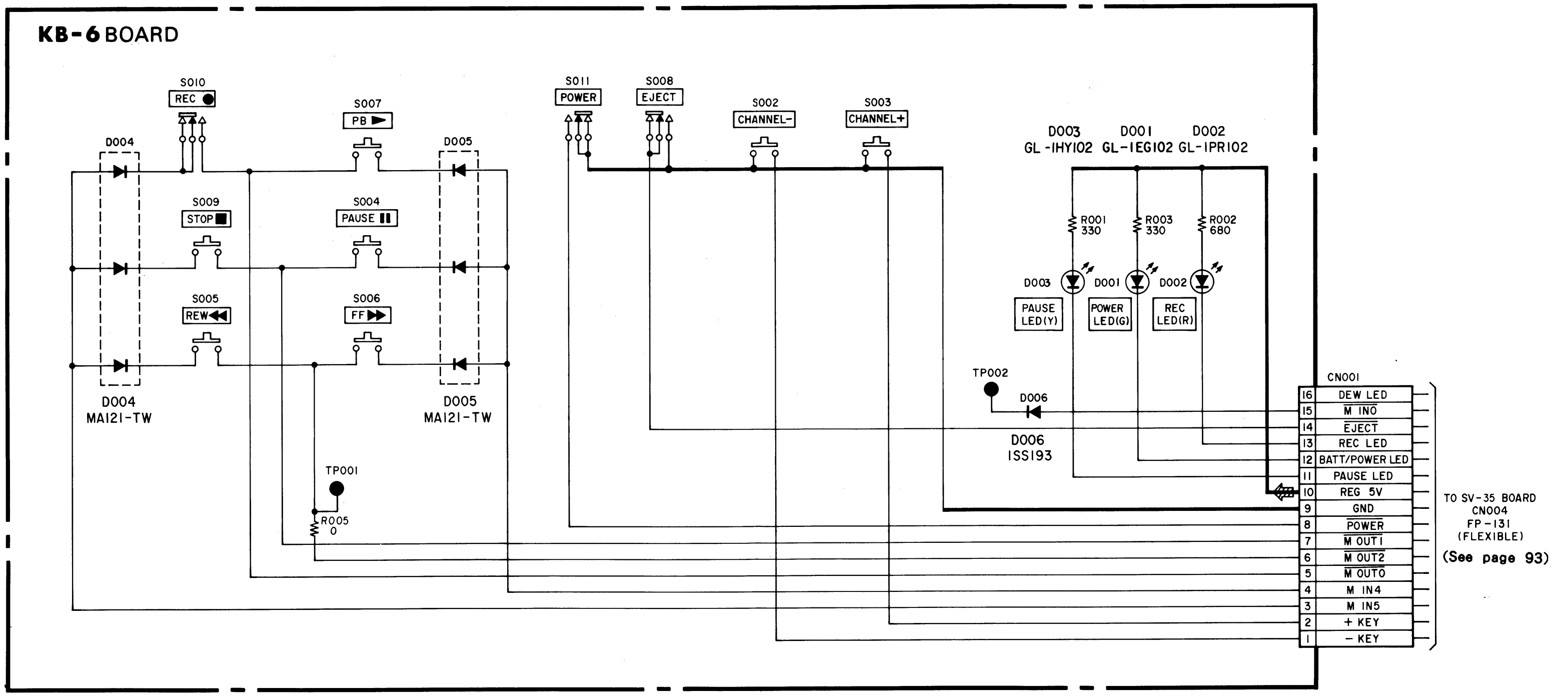
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 1

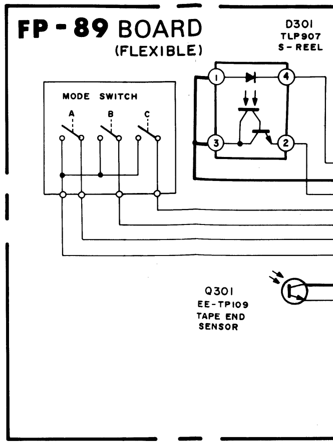
– Ref. No. UC-1 BOARD : 1000 series, KB-6, KB-7, JK-34, CA-15 BOARDS : 3000 series, FP-89 BOARD : 4000 series, FP-90 BOARD : 5000 series –

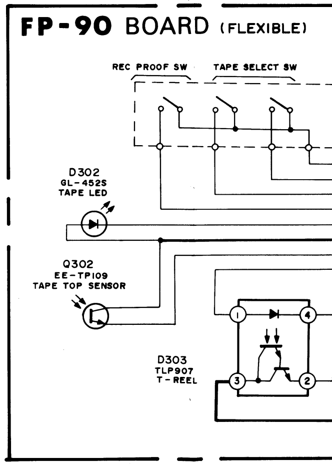
A B C D E F G H I J

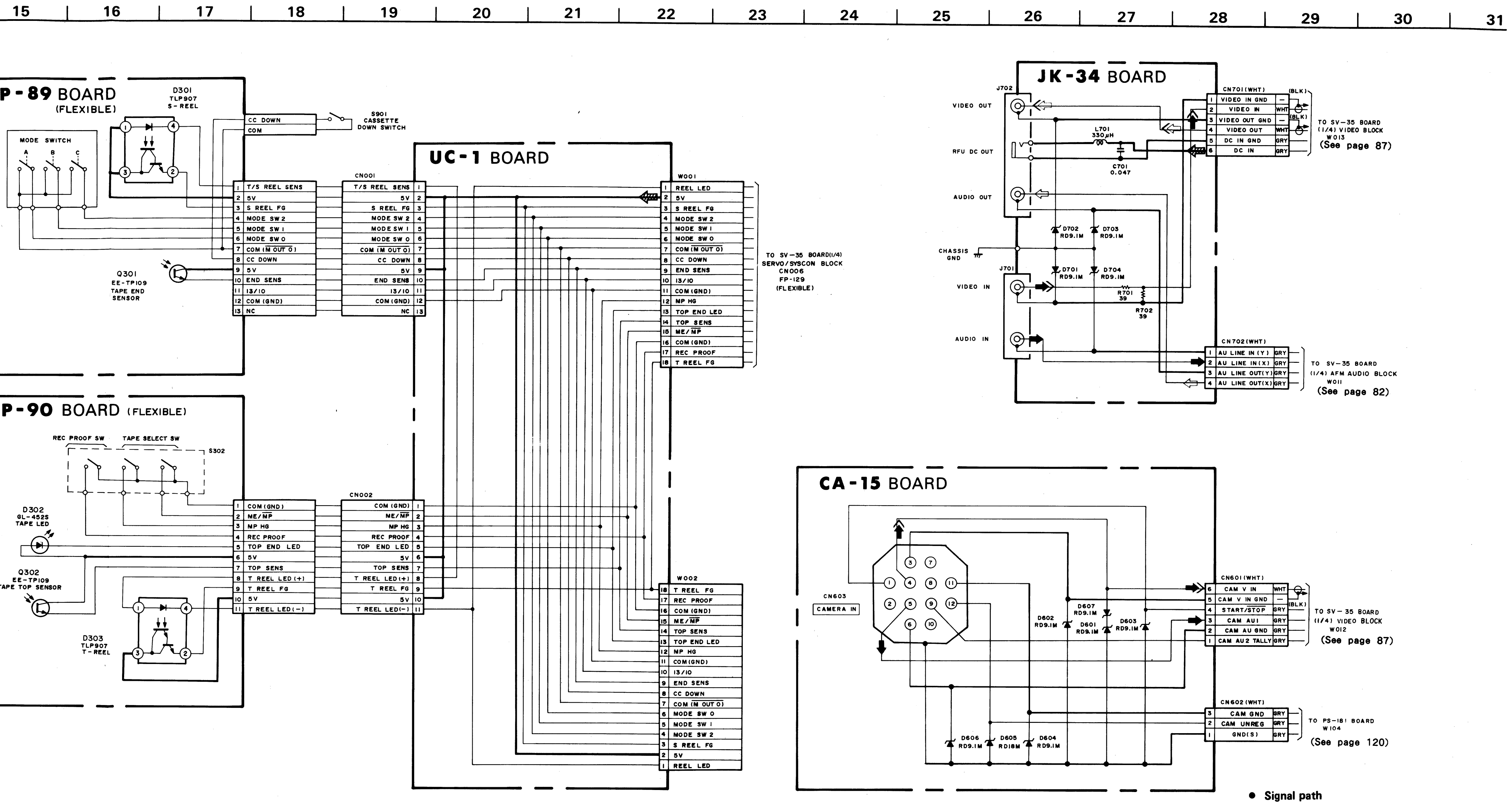

KB-7 BOARD
D301 TLR123A
CUNTER RESET
S301
DATA SCREEN ON/OFF
S302
R302 150k
D301 TIMER REC LED
R301 1.5k
R303 47k
C301 0.1
W301
TO RG-5 BOARD CN902 FP-130 (FLEXIBLE) (See page 71)
1 TIMER REC LED
2 SCREEN/COUNTER
3 GND
4 BVR OUT 2
5 AVR I IN
6 AVR C OUT
7 AVR 2 OUT(GND)
8 BVR OUT C
9 BVR IN I
R306 1k
RV301 10k
◢VOLUME
R304 0
RV302 2k
BRIGHT


SW UNIT
S001 CLOCK SET
S002 TIMER SET
S003 UP
S004 NEXT
S005 TIMER REC
S006 SLEEP
R001 47k
R002 22k
R003 15k
4 GND
3 TIMER KEY
2 TIMER REC
1 TIMER SET
TO RG-5 BOARD CN903 (See page 71)


KB-6 BOARD
S010 REC ●
S007 PB ▶
S011 POWER
S008 EJECT
S002 CHANNEL-
S003 CHANNEL+
D004
D005
S009 STOP ■
S004 PAUSE ▮▮
S005 REW◀◀
S006 FF▶▶
D004 MA121-TW
D005 MA121-TW
D003 GL-1HY102
D001 GL-1EG102
D002 GL-1PR102
R001 330
R003 330
R002 680
D003 PAUSE LED(Y)
D001 POWER LED(G)
D002 REC LED(R)
TP002
D006
D006 1SS193
TP001
R005 0
CN001
16 DEW LED
15 M IN0
14 EJECT
13 REC LED
12 BATT/POWER LED
11 PAUSE LED
10 REG 5V
9 GND
8 POWER
7 M OUT1
6 M OUT2
5 M OUT0
4 M IN4
3 M IN5
2 + KEY
1 – KEY
TO SV-35 BOARD CN004 FP-131 (FLEXIBLE) (See page 93)


FP-89 BOARD (FLEXIBLE)
D301 TLP907 S-REEL
MODE SWITCH
A B C
Q301 EE-TP109 TAPE END SENSOR


FP-90 BOARD (FLEXIBLE)
REC PROOF SW
TAPE SELECT SW
D302 GL-452S TAPE LED
Q302 EE-TP109 TAPE TOP SENSOR
D303 TLP907 T-REEL


15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
P-89 BOARD (FLEXIBLE)
D301 TLP907 S-REEL
MODE SWITCH
A B C
CC DOWN
COM
S901 CASSETTE DOWN SWITCH
T/S REEL SENS
5V
S REEL FG
MODE SW 2
MODE SW 1
MODE SW 0
COM (M OUT O)
CC DOWN
END SENS
13/10
COM (GND)
NC
Q301 EE-TP109 TAPE END SENSOR
UC-1 BOARD
CN001
CN002
W001
W002
REEL LED
MP HG
TOP END LED
TOP SENS
ME/MP
REC PROOF
T REEL FG
TO SV-35 BOARD(1/4) SERVO/SYSCON BLOCK CN006 FP-129 (FLEXIBLE)
P-90 BOARD (FLEXIBLE)
REC PROOF SW
TAPE SELECT SW
S302
D302 GL-452S TAPE LED
Q302 EE-TP109 TAPE TOP SENSOR
D303 TLP907 T-REEL
T REEL LED(+)
T REEL LED(−)
JK-34 BOARD
J702
VIDEO OUT
RFU DC OUT
AUDIO OUT
CHASSIS GND
J701
VIDEO IN
AUDIO IN
L701 330µH
C701 0.047
D702 RD9.1M
D703 RD9.1M
D701 RD9.1M
D704 RD9.1M
R701 39
R702 39
CN701(WHT)
VIDEO IN GND
VIDEO IN
VIDEO OUT GND
VIDEO OUT
DC IN GND
DC IN
(BLK)
WHT
GRY
TO SV-35 BOARD (1/4) VIDEO BLOCK W013
(See page 87)
CN702(WHT)
AU LINE IN(Y)
AU LINE IN(X)
AU LINE OUT(Y)
AU LINE OUT(X)
TO SV-35 BOARD (1/4) AFM AUDIO BLOCK W011
(See page 82)
CA-15 BOARD
CN603
CAMERA IN
D602 RD9.1M
D607 RD9.1M
D601 RD9.1M
D603 RD9.1M
D606 RD9.1M
D605 RD18M
D604 RD9.1M
CN601(WHT)
CAM V IN
CAM V IN GND
START/STOP
CAM AU1
CAM AU GND
CAM AU2 TALLY
TO SV-35 BOARD (1/4) VIDEO BLOCK W012
(See page 87)
CN602(WHT)
CAM GND
CAM UNREG
GND(S)
TO PS-181 BOARD W104
(See page 120)

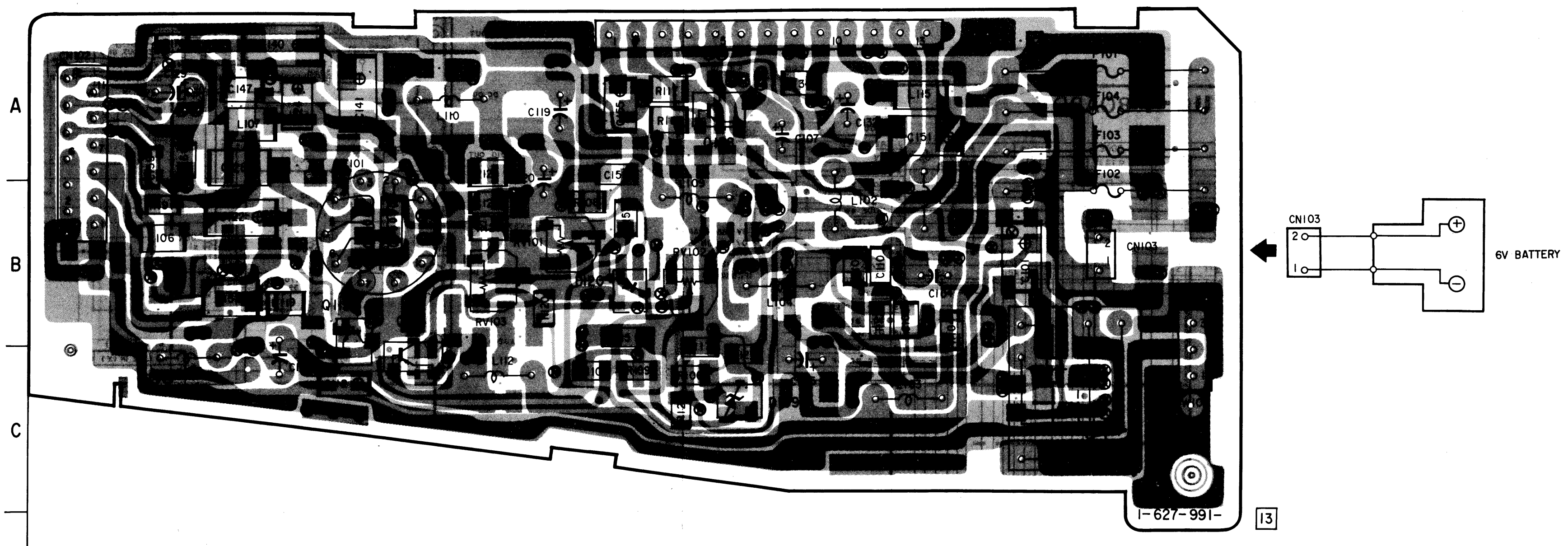
- Signal path
➡ :REC Y & CHROMA SIGNAL
⇨ :PB Y & CHROMA SIGNAL
➡ :REC AUDIO SIGNAL
⇨ :PB AUDIO SIGNAL

PS-181 (SWITCHING POWER SUPPLY) PRINTED WIRING BOARD

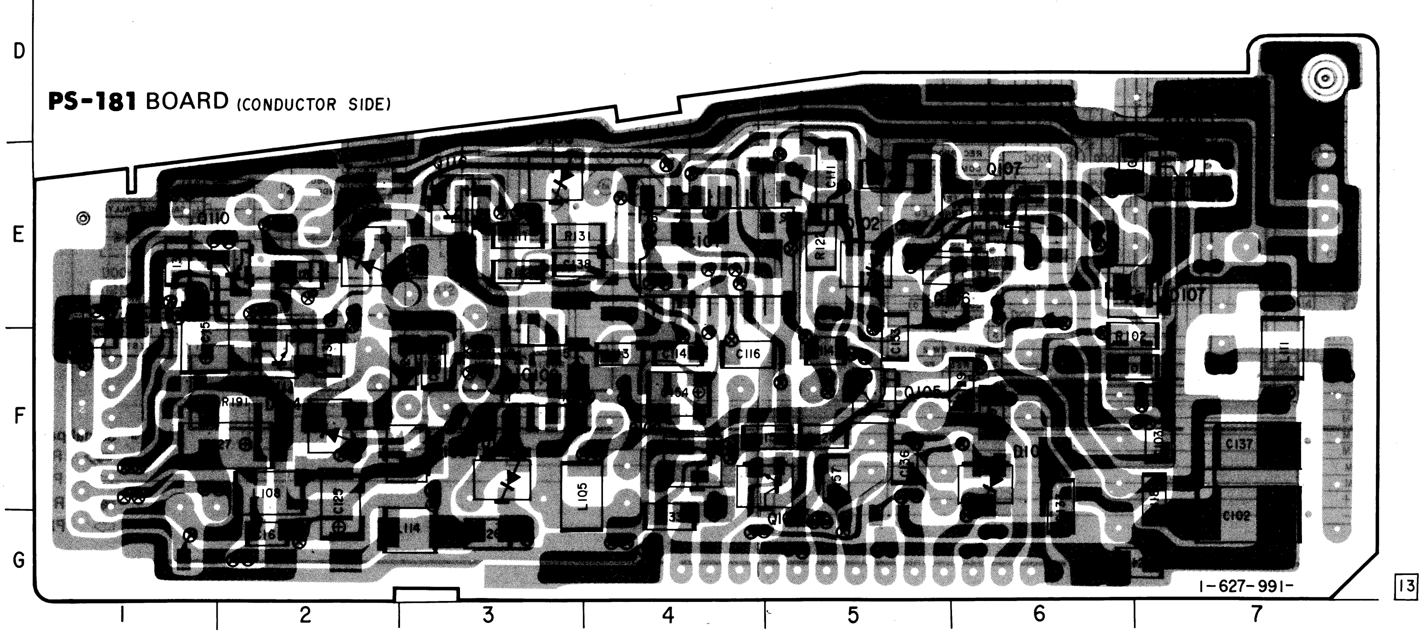
– Ref. No. PS-181 BOARD : 3000 series –

PS-181 BOARD	
CN101	A-5
CN102	A-1
CN103	B-7
D101	F-3
D102	E-5
D103	E-2
D104	F-2
D105	F-3
D106	E-3
D107	E-7
D108	F-6
D109	C-4
IC101	E-4
IC102	F-3
Q101	E-7
Q104	F-4
Q105	F-5
Q106	E-6
Q107	E-6
Q108	A-5
Q109	F-4
Q110	E-2
Q111	F-2
Q114	C-3
Q115	B-2
Q116	E-3
RV101	B-4
RV102	B-3
RV103	B-3

PS-181 BOARD (COMPONENT SIDE)


A
B
C
C119
L102
F101
F104
F103
F102
CN103
RV103
CN103
2
1
6V BATTERY
1-627-991-
13

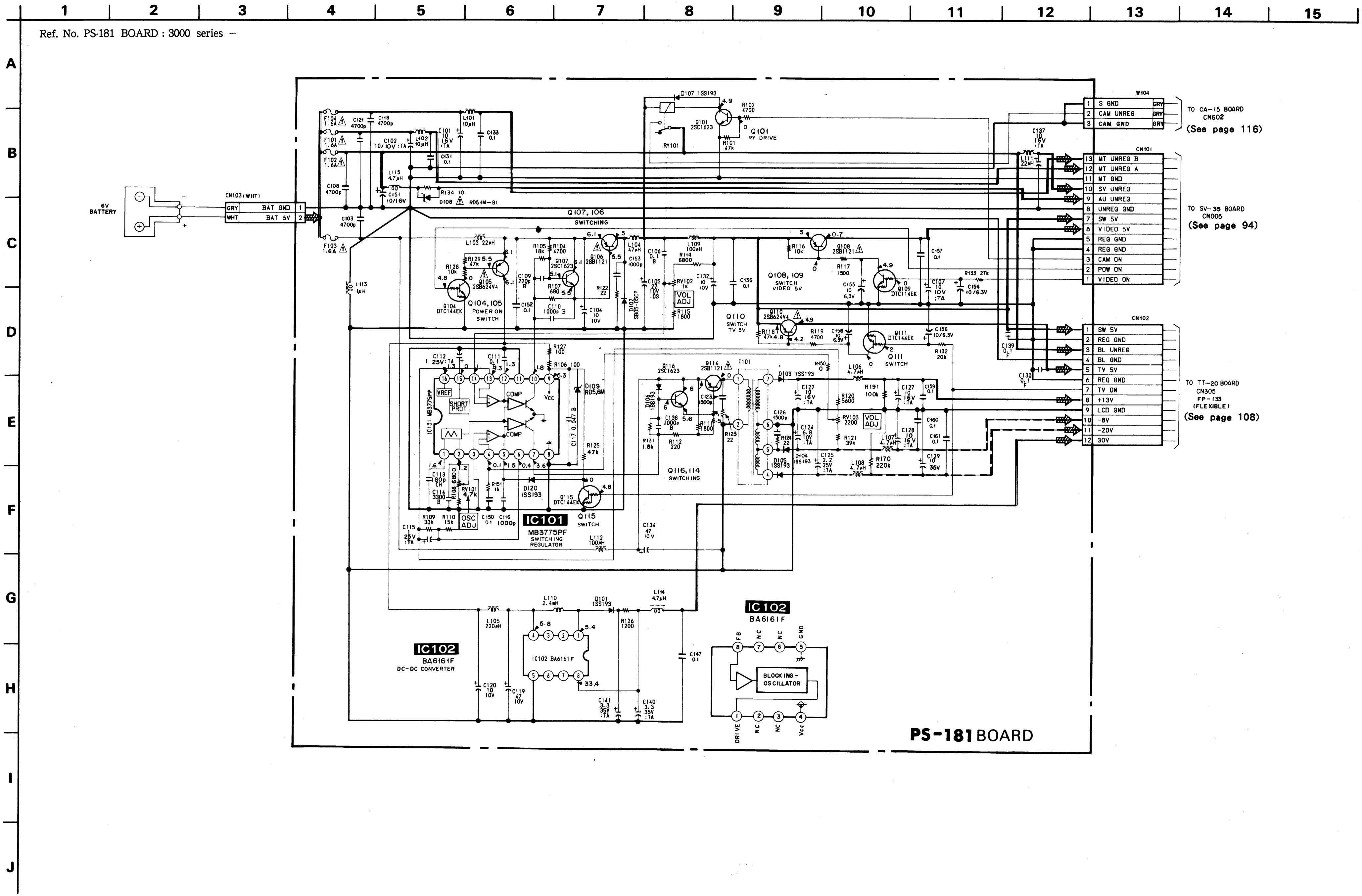
PS-181 BOARD (CONDUCTOR SIDE)


D
E
F
G
Q110
R131
IC101
Q107
C116
R102
Q105
C137
C102
L105
L108
L114
1-627-991-
13
1
2
3
4
5
6
7

PS-181 (SWITCHING POWER SUPPLY) SCHEMATIC DIAGRAM

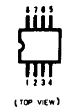
Ref. No. PS-181 BOARD : 3000 series –

ATTERY

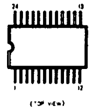

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
A
B
C
D
E
F
G
H
I
J
6V BATTERY
CN103 (WHT)
GRY BAT GND 1
WHT BAT 6V 2
F104 1.6A
F101 1.6A
F102 1.6A
F103 1.6A
C121 4700p
C118 4700p
L101 10μH
C133 0.1
C102 10/10V :TA
L102 10μH
C101 10 16V :TA
C131 0.1
L115 4.7μH
C151 10/16V
C108 4700p
C103 4700p
R134 10
D108 RD5.1M–B1
L113 1μH
D107 1SS193
RY101
Q101 2SC1623
R102 4700
R101 47k
Q101 RY DRIVE
Q107, 106 SWITCHING
L103 22μH
R105 18k
R104 4700
Q106 2SB1121
Q107 2SC1623
L104 47μH
C153 1000p
C106 0.1 B
L109 100μH
R114 6800
R128 10k
R129 47k
Q105 2SB624V4
Q104 DTC144EK
Q104, 105 POWER ON SWITCH
C109 220p B
R107 680
C110 1000p B
C152 0.1
C104 10 10V
R122 22
D102 SB05-05CP
C105 22 10V :DS
RV102 1k
VOL ADJ
R115 1800
C132 10 10V
C136 0.1
Q110 SWITCH TV 5V
R116 10k
Q108 2SB1121
Q108, 109 SWITCH VIDEO 5V
R117 1500
C155 10 6.3V
Q109 DTC144EK
C157 0.1
C107 10 10V :TA
R133 27k
C154 10/6.3V
Q110 2SB624V4
R118 47k
R119 4700
C158 10 6.3V
Q111 DTC144EK
Q111 SWITCH
C156 10/6.3V
R132 20k
C137 10 16V :TA
L111 22μH
C139 0.1 F
C130 0.1 F
C112 25V :TA
C111 0.1
R127 100
R106 100
D109 RD5.6M
VREF
SHORT PROT
COMP
Vcc
IC101 MB3775PF
C117 0.047 B
R125 4.7k
C113 180p CH
C114 3300 B
R108 6800
RV101 4.7k
R151 1k
D120 1SS193
Q115 DTC144EK
R109 33k
R110 15k
OSC ADJ
C150 0.1
C116 1000p
C115 25V :TA
IC101
MB3775PF SWITCHING REGULATOR
Q115 SWITCH
L112 100μH
C134 47 10V
Q116 2SC1623
Q114 2SB1121
T101
D103 1SS193
R150 0
D106 1SS193
C138 1000p B
C123 1500p
R111 1800
R131 1.8k
R112 220
R123 22
C126 1500p
R126 22
C122 10 16V :TA
C124 6.8 10V :TA
D104 1SS193
D105 1SS193
C125 2.2 25V :TA
R120 5600
RV103 2200
VOL ADJ
R121 39k
L106 4.7μH
R191 100k
C127 10 16V :TA
C159 0.1
L107 4.7μH
C128 10 16V :TA
C160 0.1
C161 0.1
L108 4.7μH
R170 220k
C129 10 35V
Q116, 114 SWITCHING
W104
1 S GND GRY
2 CAM UNREG GRY
3 CAM GND GRY
TO CA-15 BOARD CN602 (See page 116)
CN101
13 MT UNREG B
12 MT UNREG A
11 MT GND
10 SV UNREG
9 AU UNREG
8 UNREG GND
7 SW 5V
6 VIDEO 5V
5 REG GND
4 REG GND
3 CAM ON
2 POW ON
1 VIDEO ON
TO SV-35 BOARD CN005 (See page 94)
CN102
1 SW 5V
2 REG GND
3 BL UNREG
4 BL GND
5 TV 5V
6 REG GND
7 TV ON
8 +13V
9 LCD GND
10 -8V
11 -20V
12 30V
TO TT-20 BOARD CN305 FP-133 (FLEXIBLE) (See page 108)
L110 2.4mH
D101 1SS193
L114 4.7μH
L105 220μH
R126 1200
IC102 BA6161F
C147 0.1
C120 10 10V
C119 47 10V
C141 3.3 35V :TA
C140 3.3 35V :TA
IC102
BA6161F
DC-DC CONVERTER
IC102
BA6161F
FB
NC
NC
GND
BLOCKING-OSCILLATOR
DRIVE
NC
NC
Vcc
PS-181 BOARD

4-3. SEMICONDUCTORS

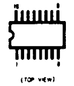
BA6161F
NJM2073M
NJM2903
μPC358G2
μPC393G2



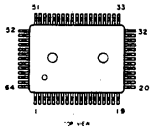
AN5313NS
CX20114



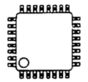
CX20115A
MB3775PF
TC4053BF
TC4528BFHB



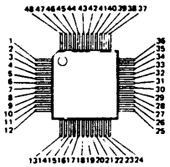
CXA1200BQ



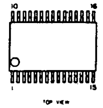
CXA1201Q



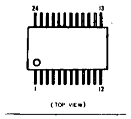
CXA1202R



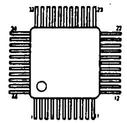
CXA1127M



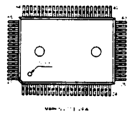
CXA1203N



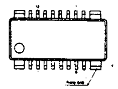
CXA1204Q



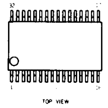
CXP5078-008Q
CXP80116-080Q



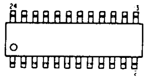
LB1631M



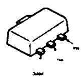
M51403FP



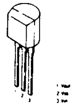
M52007FP



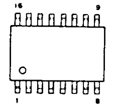
S-8052ALO-LG-S
S-8054ALB-LM-S



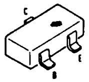
S-81350AG



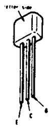
μPD6142G601



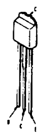
2SA812
2SA812-M5
2SA1576-R
2SB624-BV4
2SC1623
2SC3053-C
2SC4081-R
DTA114EK
DTC114EK
DTC144EK



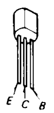
2SA1175



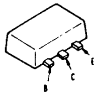
2SA1385



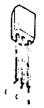
2SA733



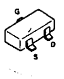
2SB1121
2SB1132-Q
2SD1664-Q



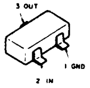
2SC2669
DTC144ES



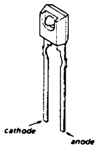
2SK209G



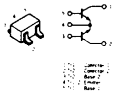
DTA124EU
DTA144EU
DTC114EU
DTC124EU
DTC144EU


3 OUT
1 GND
2 IN

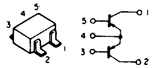
EE-TP109


cathode
anode

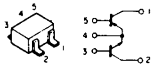
FMA2
FMA4
FMG1
FMW1
FMW2



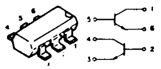
FMS1
FMY3
FMY4



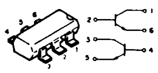
FMY1-T99



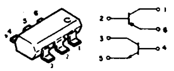
IMH2-T110



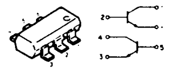
IMX2-T109



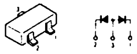
IMZ1-T109



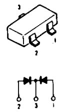
XN4210



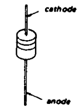
1S2835



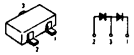
1S2837



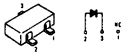
1SS119


cathode
anode

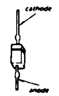
1SS123



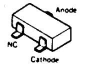
1SS193
RD2.4M-B
RD5.1M-B1
RD5.1M-B2
RD5.6M-B1
RD5.6M-B2
RD7.5M-B1
RD9.1M-B1
RD18M-B1
SB01-05CP



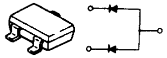
1SS283


cathode
anode

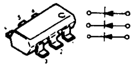
DA106U
SB05-05CP


Anode
NC
Cathode

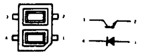
DAP202U



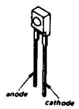
DAP121



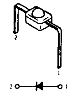
TLP907



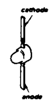
GL425S


anode
cathode

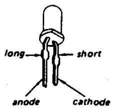
GL-1EG102
GL-1PR102



GL-1HY


cathode
anode

TLR123


long
short
anode
cathode

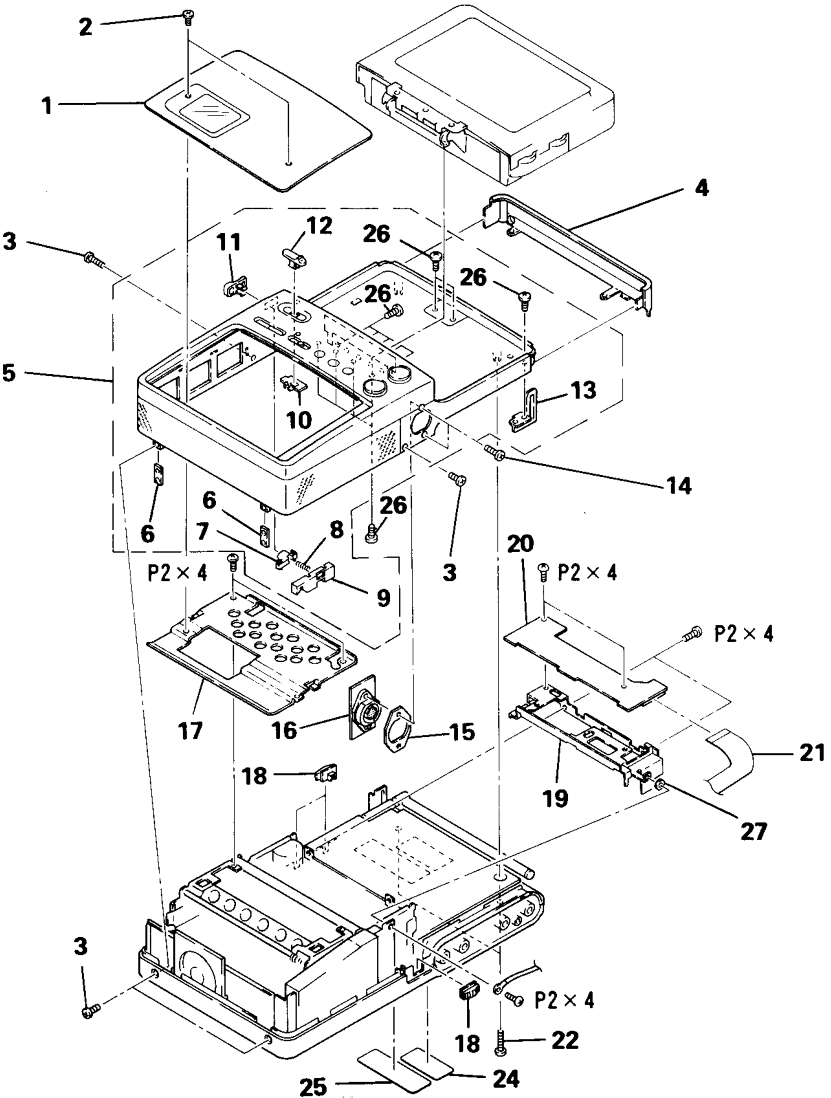
SECTION 5
EXPLODED VIEWS

NOTE:

- –XX, –X mean standardized parts, so they may have some differences from the original one.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.

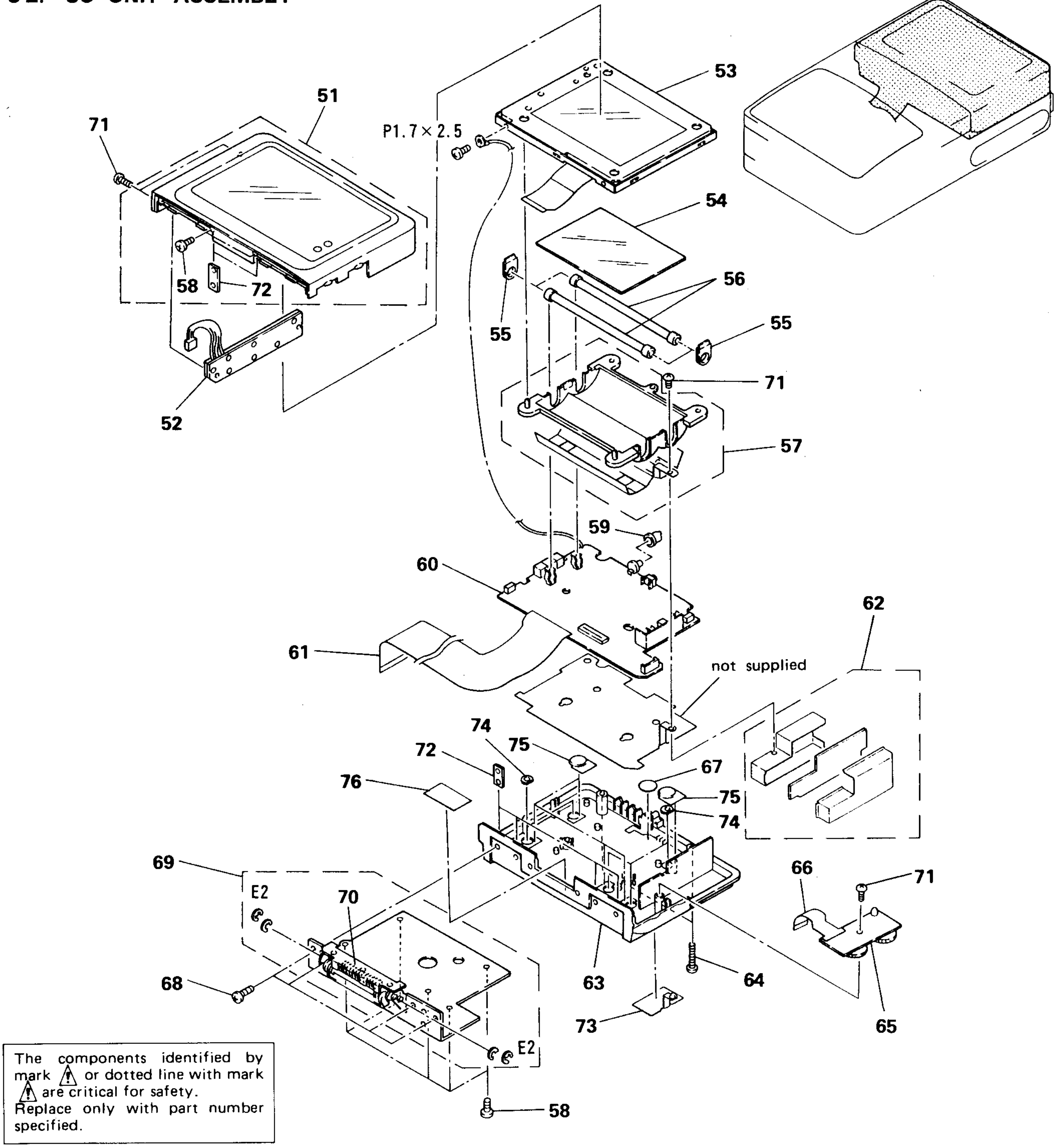
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

5-1. CABINET (UPPER) ASSEMBLY



No.	Part No.	Description	Remark
1	X-3726-870-1	LID ASSY, CASSETTE COMPARTMENT AEP, UK, E MODEL	
	X-3726-876-1	LID ASSY, CASSETTE COMPARTMENT WEST GERMANY MODEL	
2	*3-719-555-01	SCREW (M1.7X4.5)	
3	3-719-381-01	SCREW (M2X4)	
4	3-728-969-11	COVER, ANTENNA	
5	A-7080-699-A	CABINET BLOCK ASSY, UPPER AEP, UK, E MODEL	6-13, 26
	A-7080-759-A	CABINET BLOCK ASSY, UPPER WEST GERMANY MODEL	6–13, 26
6	3-730-103-01	NUT, PLATE	
7	3-728-932-01	BUTTON, EJECT LOCK	
8	3-303-973-00	SPRING, COMPRESSION	
9	3-728-955-02	PLATE, SLIDE, EJECT	
10	3-728-958-02	PLATE, SLIDE, POWER	
11	3-728-956-01	BUTTON, EJECT	
12	3-728-959-01	BUTTON, POWER	
13	3-728-940-01	HOLDER (RIGHT), BAND	
14	3-719-381-21	SCREW (M2X6)	
15	*3-728-901-01	SPACER (CA)	
16	*1-627-994-11	CA-15 BOARD	
17	*3-728-923-01	REINFORCEMENT	
18	3-728-950-01	KNOB, SLIDE	
19	*X-3726-850-1	BRACKET ASSY, KB	
20	*A-7070-680-A	KB-6 (A) BOARD, COMPLETE	
21	1-628-031-11	FP-131 FLEXIBLE BOARD	
22	2-370-905-51	SCREW (B) (2X12), TAPPING	
24	*3-730-157-01	LABEL, MODEL NUMBER(AE) AEP, UK, E MODEL	
	*3-730-179-01	LABEL, MODEL NUMBER (WG) WEST GERMANY MODEL	
25	*3-728-978-01	LABEL, BATTERY FITTING	
26	3-713-786-21	SCREW (M2X3)	
27	3-730-139-01	WASHER, FIBER	

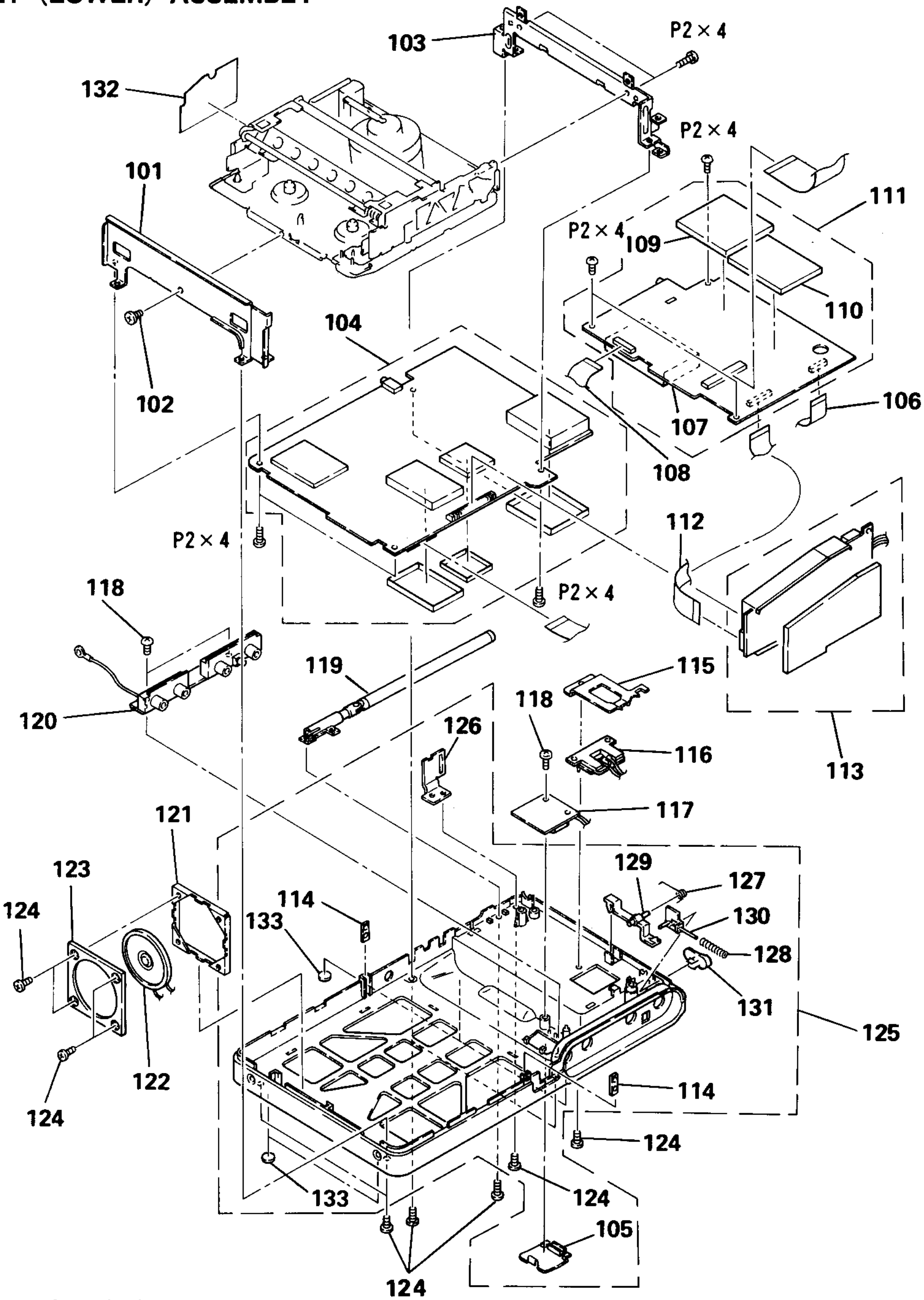
5-2. SC UNIT ASSEMBLY



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

No.	Part No.	Description	Remark
51	X-3726-868-1	CABINET (UPPER) ASSY, SC	58, 72
52	1-466-009-11	SWITCH BLOCK, CONTROL	
53	1-808-658-11	DISPLAY MODULE, LIQUID CRYSTAL	
54	3-728-931-01	ILLUMINATOR	
55	3-728-938-01	RUBBER, RETAINER	
56	1-518-638-11	TUBE, FLUORECENT	
57	X-3726-842-1	REFLECTOR ASSY	
58	3-713-786-21	SCREW (M2X3)	
59	3-728-945-01	KNOB, COLOR	
60	*A-7061-464-A	RG-5 (A) BOARD, COMPLETE	
61	1-628-030-11	FP-132 FLEXIBLE BOARD	
62	⚠1-466-011-11	CONVERTER UNIT, D/A	
63	3-728-970-11	CABINET (BOTTOM), SC	
64	3-730-123-01	SCREW (M1.7X8), SPECIAL HEAD	
65	*A-7070-811-A	KB-7 (B) BOARD, COMPLETE	
66	1-628-032-11	FP-130 FLEXIBLE BOARD	
67	*3-730-112-01	SHEET, INSULATING, LOCK SHAFT	
68	3-719-381-01	SCREW (M2X4)	
69	A-7090-843-A	HINGE BLOCK ASSY	70
70	3-730-118-01	SPRING, COMPRESSION	
71	2-370-905-21	SCREW (B) (2X5), TAPPING	
72	3-730-104-01	NUT, SC PLATE	
73	*3-730-110-01	PLATE, GROUND, DA	
74	3-730-106-01	NUT (D), PLATE	
75	*3-730-111-01	PACK, INSULATING	
76	*3-730-113-01	SHEET, INSULATING, HINGE	

5-3. CABINET (LOWER) ASSEMBLY


103
P2 × 4
132
P2 × 4
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P2 × 4
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P2 × 4
P2 × 4
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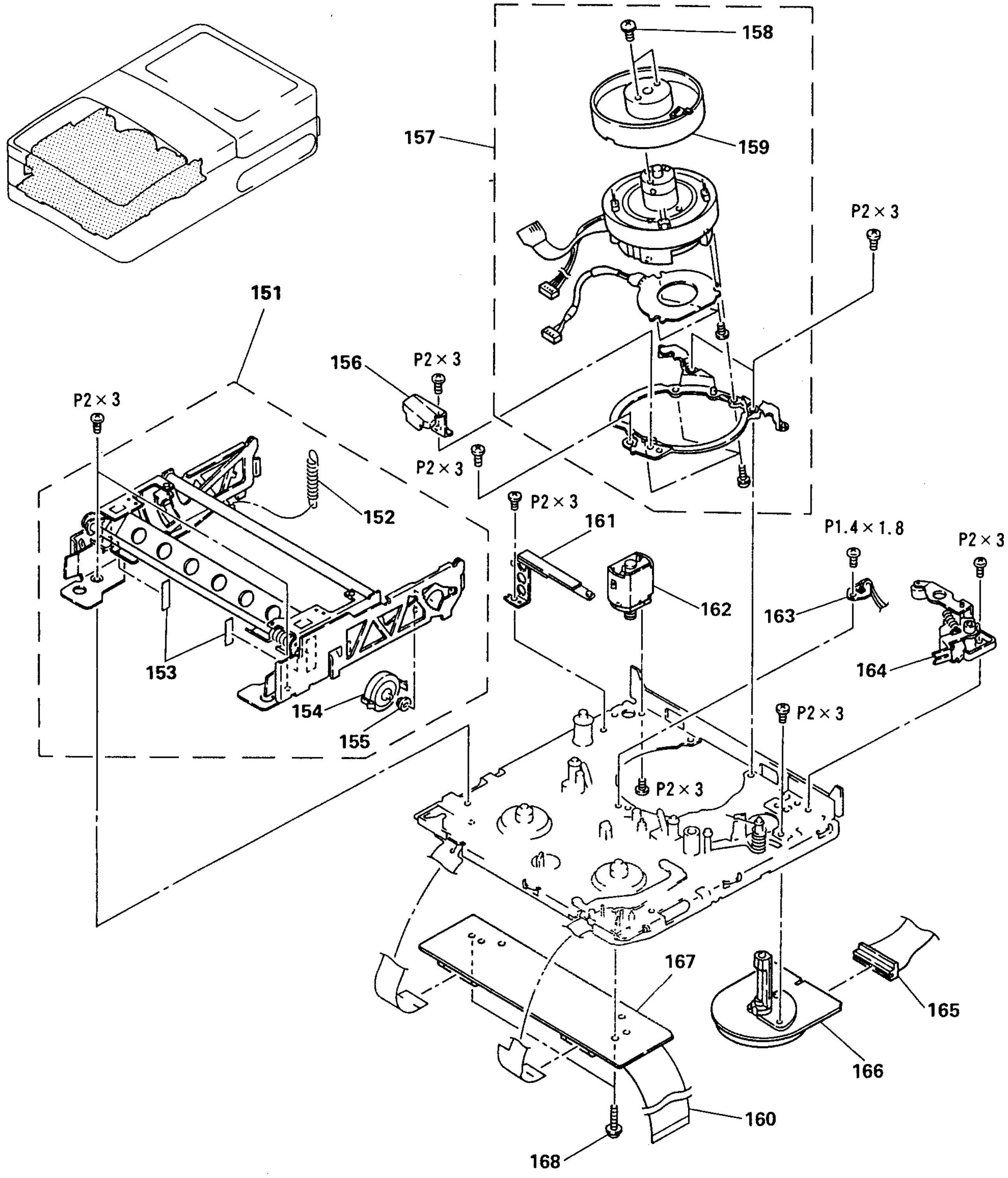
124

No.	Part No.	Description	Remark
101	*3-728-927-01	FRAME (FRONT)	
102	3-730-107-01	SCREW (M2X2.2)	
103	*3-728-928-01	FRAME (REAR)	
104	*A-7061-462-A	SV-35 (A) BOARD, COMPLETE	
105	3-728-949-01	LID, BATTERY CASE, LITHIUM	
106	1-628-035-11	FP-150 FLEXIBLE BOARD	
107	1-465-136-11	TUNER PACK (EC-EE2585) (TU101) AEP, UK, E MODEL	
	1-465-136-21	TUNER PACK (EC-EE2585G) (TU101) WEST GERMANY MODEL	
108	1-628-028-11	FP-141 FLEXIBLE BOARD	
109	*X-3726-840-1	CASE (BOTTOM LID) ASSY, SHIELD, TT	
110	*X-3726-839-1	CASE (BOTTOM LID) ASSY	
111	*A-7061-463-A	TT-20 (A) BOARD, COMPLETE (WEST GERMANY MODEL)	107, 109, 110
	*A-7061-472-A	TT-20 (B) BOARD, COMPLETE (AEP, UK, E MODEL)	107, 109, 110
112	1-628-029-11	FP-133 FLEXIBLE BOARD	
113	*A-7061-172-A	PS-181 (A) BOARD, COMPLETE	
114	3-730-103-01	NUT, PLATE	
115	*3-728-939-01	HOLDER, TERMINAL BOARD	
116	1-535-658-41	TERMINAL BOARD	
117	*1-627-989-11	LI-6 BOARD	
118	3-713-790-01	SCREW (M2X6), TAPPING, P3	
119	1-501-415-11	ANTENNA, TELESCOPIC	
120	*1-627-995-11	JK-34 BOARD	
121	3-728-899-01	BRACKET, SPEAKER	
122	1-503-293-00	SPEAKER	
123	3-728-915-01	PALTE, BAFFLE	
124	3-719-381-01	SCREW (M2X4)	
125	A-7080-725-A	CABINET BLOCK ASSY, BOTTOM	105, 114, 124, 126-131
126	3-728-941-01	HOLDER (LEFT), BAND	
127	3-728-943-01	SPRING (B)	
128	3-728-944-01	SPRING, COMPRESSION	
129	3-728-946-01	LOCK, BATTERY	
130	3-728-947-01	PLATE, SLIDE, RELEASE	
131	3-728-948-01	BUTTON, RELEASE	
132	*3-730-149-01	PLATE, BLIND, MD	
133	4-879-274-11	SPACER	

5-4. MD BLOCK ASSEMBLY 1


158
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P2 × 3
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P2 × 3
P2 × 3
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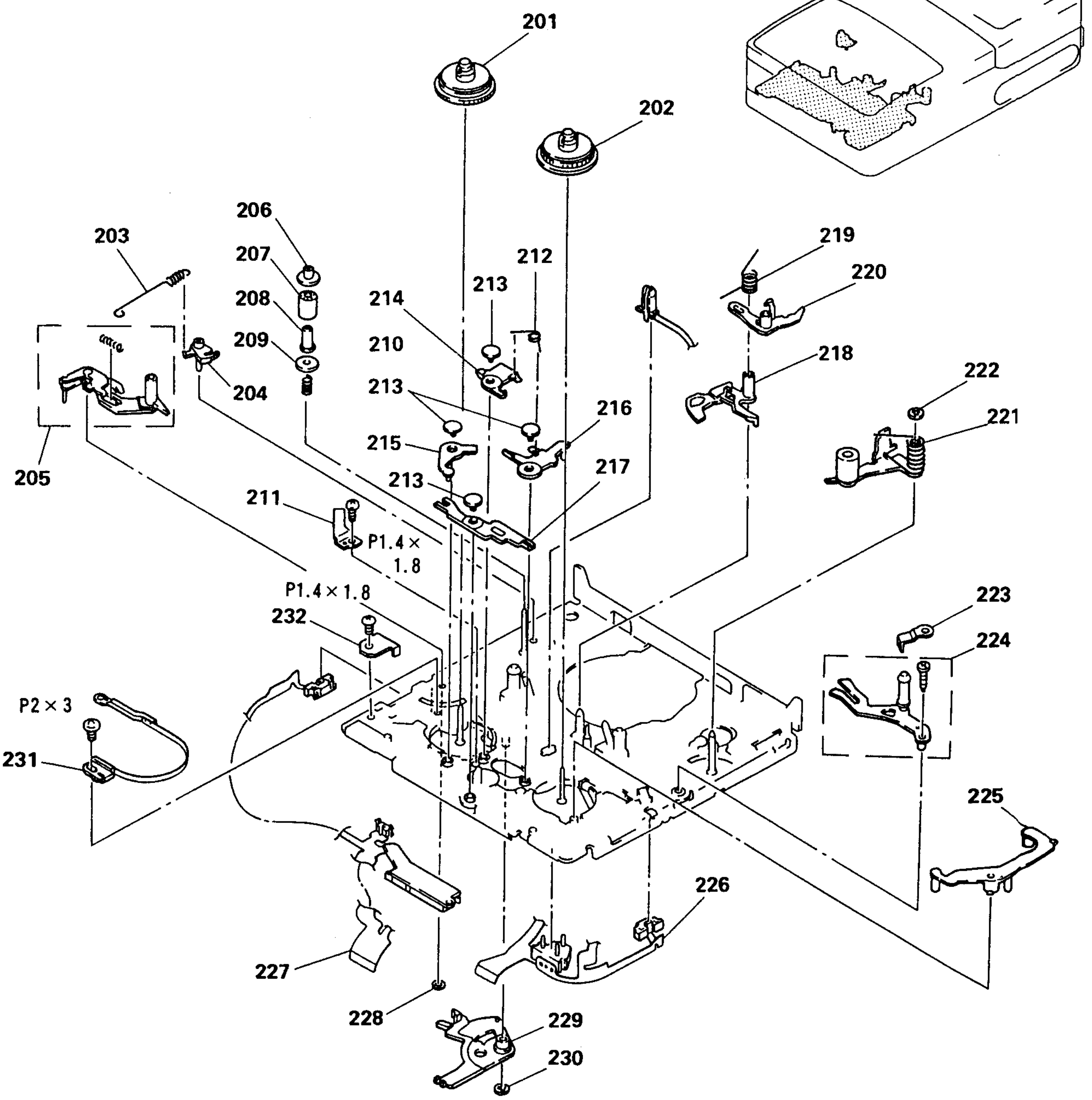
168

No.	Part No.	Description	Remark
151	X-3726-833-1	CASSETTE COMPARTMENT ASSY	152-155
152	3-728-825-03	SPRING, TENSION	
153	*3-728-829-01	TAPE	
154	3-728-867-02	DAMPER, OIL	
155	3-728-828-02	GEAR, DAMPER	
156	3-728-868-01	GUARD, GUIDE	
157	A-7048-229-A	DRUM ASSY, (DGU-40A-R)	158, 159
158	3-686-493-01	SCREW (M2X5), P1	
159	A-7049-215-A	DRUM ASSY, UPPER, ROTARY (DGR-40-R)	
160	1-628-033-11	FP-129 FLEXIBLE BOARD	
161	1-535-739-12	TERMINAL, SHAFT EARTH	
162	A-7040-160-A	MOTOR ASSY, THREADING (M903)	
163	1-808-505-11	SENSOR	
164	A-7040-161-B	ROLLER BLOCK ASSY, HC	
165	1-628-034-11	FP-142 FLEXIBLE BOARD	
166	8-835-331-01	MOTOR, DC U-22A (CAPSTAN) (M902)	
167	*1-627-997-11	UC-1 BOARD	
168	3-713-790-01	SCREW (M2X6), TAPPING, P3	

5-5. MD BLOCK ASSEMBLY 2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P1.4 ×
1.8
P1.4 × 1.8
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P2 × 3
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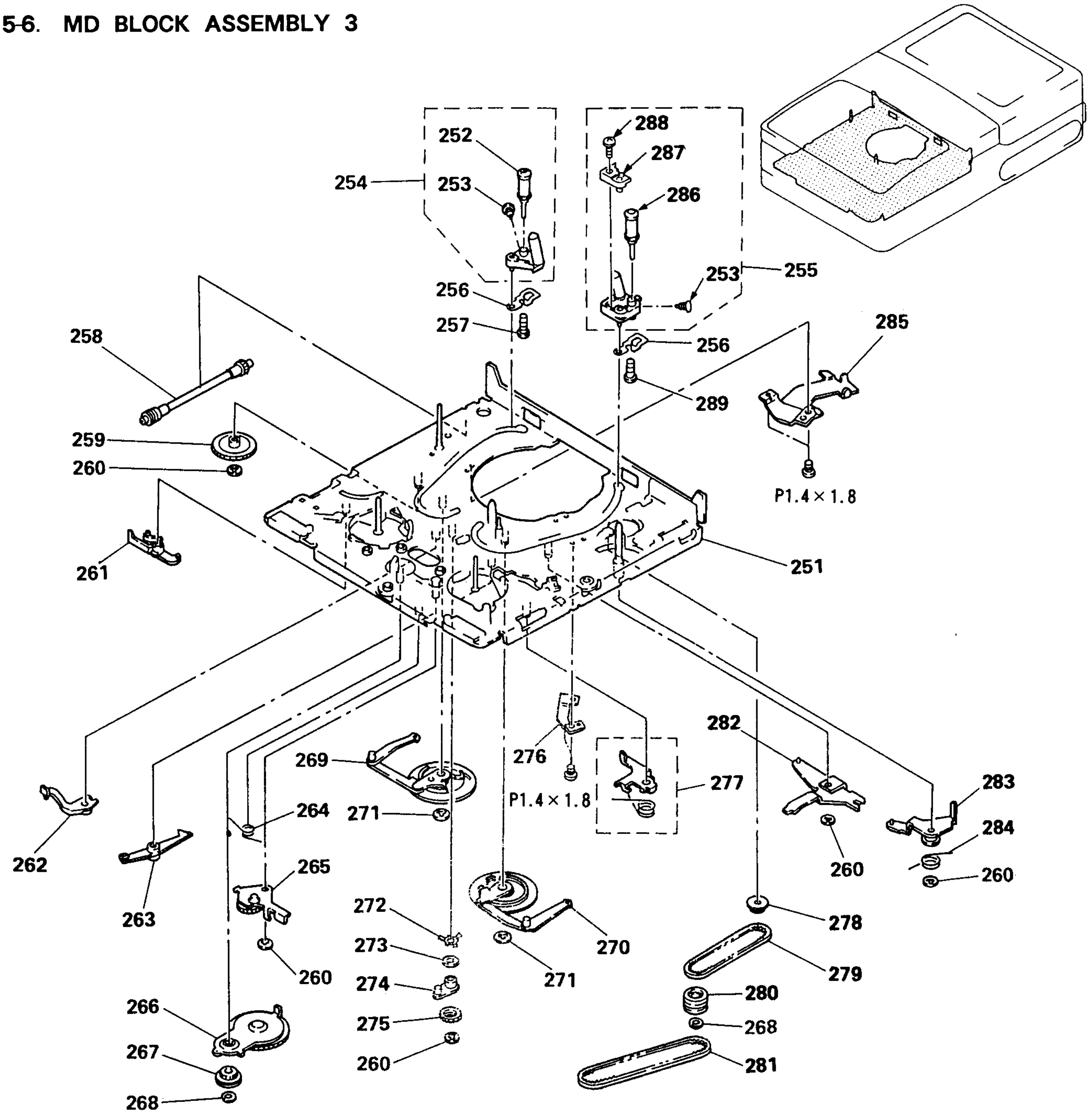
No.	Part No.	Description	Remark
201	X-3726-821-2	TABLE ASSY, REEL, S	
202	X-3726-825-4	TABLE ASSY, REEL, T	
203	3-728-995-01	SPRING, TENSION	
204	3-728-855-03	ARM, ADJUSTMENT	
205	X-3726-832-3	ARM ASSY, TENSION REGULATOR	
206	3-726-884-01	FLANGE, UPPER, TG2	
207	3-726-883-01	ROLLER, TG2	
208	3-726-885-01	SLEEVE, TG2	
209	3-726-882-02	FLANGE, LOWER, TG2	
210	3-726-886-01	SPRING, COMPRESSION	
211	3-726-848-01	RETAINER, TL	
212	3-726-866-01	SPRING (ST), TORSION	
213	3-726-858-01	PIN, SHAFT RETAINER	
214	3-728-849-01	BRAKE, S	
215	3-726-852-01	BRAKE, LB	
216	3-728-850-01	BRAKE, T	
217	3-726-853-01	LEVER, LB	
218	3-728-875-01	STOPPER, RK	
219	3-726-864-01	SPRING (RK), TORSION	
220	3-728-852-01	ARM, RK STOPPER	
221	A-7040-163-B	ARM BLOCK ASSY, PINCH	
222	3-669-465-00	WASHER (1.5), STOPPER	
223	3-728-808-01	SPRING, LEAF	
224	X-3726-822-1	ARM ASSY, TG7	
225	3-728-848-01	ARM, LB RELEASE	
226	1-628-061-12	FP-90 FLEXIBLE BOARD	
227	1-628-060-12	FP-89 FLEXIBLE BOARD	
228	3-321-393-11	WASHER, STOPPER	
229	X-3726-806-1	LEVER ASSY, SW	
230	3-726-829-01	WASHER, STOPPER	
231	X-3726-809-2	BAND ASSY, TENSION REGULATOR	
232	3-730-125-01	RETAINER, SW	

5-6. MD BLOCK ASSEMBLY 3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No.	Part No.	Description	Remark
251	X-3726-834-4	CHASSIS ASSY, MECHANICAL	
252	X-3726-820-1	ROLLER ASSY (U), GUIDE	
253	3-726-822-01	SCREW (M1.4X2) (STEP), HEAD	
254	A-7040-128-A	COASTER (LEFT) BLOCK ASSY	252, 253
255	A-7040-129-E	COASTER (RIGHT) BLOCK ASSY	253, 286-288
256	3-726-820-02	SPRING, LEAF	
257	3-726-830-01	SCREW (M1.4X4) (THREE LOCK)	
258	X-3726-807-1	WORM ASSY	
259	3-726-826-01	GEAR, WHEEL	
260	3-726-829-01	WASHER, STOPPER	
261	3-728-842-01	LEVER, EJECT	
262	3-728-851-01	BRAKE, UL	
263	3-726-854-01	ARM, BRAKE RELEASE	
264	3-726-865-01	SPRING (LB), TORSION	
265	A-7040-130-A	GEAR BLOCK ASSY, LB	
266	X-3726-802-1	GEAR ASSY, RK	
267	X-3726-812-1	GEAR ASSY, RC	
268	3-321-393-11	WASHER, STOPPER	
269	X-3726-830-2	GEAR (LEFT) ASSY, DRIVE	
270	X-3726-831-2	GEAR (RIGHT) ASSY, DRIVE	
271	3-669-465-00	WASHER (1.5), STOPPER	
272	3-726-867-01	SPRING, LEAF	
273	3-701-436-21	WASHER, POLYEHTHYLENE	
274	3-726-857-02	ARM, UL	
275	3-726-856-02	GEAR, UL	
276	*3-726-805-01	REINFORCEMENT (TT)	
277	X-3726-808-2	BRAKE ASSY, TS	
278	X-3726-805-1	GEAR ASSY, JOINT	
279	3-728-866-01	BELT (S), TIMING	
280	X-3726-838-1	PULLY ASSY, RELAY	
281	3-728-865-01	BELT (L), TIMING	
282	X-3726-804-1	LEVER ASSY, THREADING	
283	X-3726-824-1	ARM ASSY, PINCH SUB	
284	3-726-895-01	SPRING	
285	X-3726-841-1	REINFORCEMENT (SS) ASSY 266	
286	X-3726-864-1	ROLLER ASSY (U)-BS, GUIDE	
287	X-3726-861-2	ADJUSTOR ASSY, GUIDE	
288	3-730-141-01	SCREW (PSW) (2X4)	
289	3-730-140-01	SCREW (M1.2X4)	

FP-89 **FP-90** **PS-181**

SECTION 6
ELECTRICAL PARTS LIST

NOTE:

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- –XX, –X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms
  METAL : Metal-film resistor
  METAL OXIDE : Metal Oxide-film resistor
  F : nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, U : μ, for example:
  UA...: μA..., UPA...: μPA...,
  UPB...: μPB..., UPC...: μPC...,
  UPD...: μPD...
- CAPACITORS
  MF : μF, PF : μμF
- COILS
  MMH : mH, UH : μH

Ref.No	Part No.	Description	Remark
	1-628-060-12	FP-89 FLEXIBLE BOARD (Ref.No.4000 series) **********************	
	1-571-664-11	SWITCH, SLIDE (ENCODER)	
	3-728-869-01	HOLDER, SENSOR	

DIODE

Ref.No	Part No.	Description	Remark
D301	8-719-801-55	DIODE TLP907-0	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q301	8-729-906-48	TRANSISTOR EE-TP109	

SWITCH

Ref.No	Part No.	Description	Remark
S901	1-571-099-11	SWITCH (CASSETTE DOWN)	

`**************************************************************`

Ref.No	Part No.	Description	Remark
	1-628-061-12	FP-90 FLEXIBLE BOARD (Ref.No.5000 series) **********************	
	3-728-837-01	HOLDER, LED	
	3-728-869-01	HOLDER, SENSOR	

DIODE

Ref.No	Part No.	Description	Remark
D303	8-719-801-55	DIODE TLP907-0	
D302	8-719-940-81	DIODE GL452S	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q302	8-729-906-48	TRANSISTOR EE-TP109	

SWITCH

Ref.No	Part No.	Description	Remark
S302	1-571-680-11	SWITCH, PUSH (3 KEY) (RECOG SW)	

`**************************************************************`

Ref.No	Part No.	Description	Remark
	*A-7061-172-A	PS-181 BOARD, COMPLETE (Ref.No.3000 series) ***********************	

CAPACITOR

Ref.No	Part No.	Description		Remark
C101	1-135-093-91	TANTAL. CHIP 10MF	20%	16V
C102	1-135-093-91	TANTAL. CHIP 10MF	20%	16V
C103	1-163-017-00	CERAMIC CHIP 0.0047MF	10%	50V
C104	1-127-558-11	ELECT(SOLID) 10MF	20%	10V
C105	1-127-491-00	ELECT(SOLID) 22MF	20%	10V
C106	1-163-077-00	CERAMIC CHIP 0.1MF	10%	25V
C107	1-127-558-11	ELECT(SOLID) 10MF	20%	10V
C108	1-163-017-00	CERAMIC CHIP 0.0047MF	10%	50V
C109	1-163-125-00	CERAMIC CHIP 220PF	10%	50V
C110	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C111	1-163-077-00	CERAMIC CHIP 0.1MF	10%	25V
C112	1-135-177-91	TANTAL. CHIP 1MF	20%	25V
C113	1-163-123-00	CERAMIC CHIP 180PF	5%	50V
C114	1-163-015-00	CERAMIC CHIP 0.0033MF	10%	50V
C115	1-135-177-91	TANTAL. CHIP 1MF	20%	25V
C116	1-163-205-00	CERAMIC CHIP 0.001MF	10%	50V
C117	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C118	1-163-017-00	CERAMIC CHIP 0.0047MF	10%	50V
C119	1-124-589-11	ELECT 47MF	20%	10V
C120	1-126-157-11	ELECT 10MF	20%	10V
C121	1-163-017-00	CERAMIC CHIP 0.0047MF	10%	50V
C122	1-135-093-91	TANTAL. CHIP 10MF	20%	16V
C123	1-163-145-00	CERAMIC CHIP 0.0015MF	10%	50V
C124	1-135-156-21	TANTAL. CHIP 6.8MF	20%	10V
C125	1-135-153-91	TANTAL. CHIP 2.2MF	20%	25V
C126	1-163-145-00	CERAMIC CHIP 0.0015MF	10%	50V
C127	1-135-093-91	TANTAL. CHIP 10MF	20%	16V
C128	1-135-093-91	TANTAL. CHIP 10MF	20%	16V
C129	1-131-353-00	TANTALUM 10MF	10%	35V
C130	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C131	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C132	1-127-558-11	ELECT(SOLID) 10MF	20%	10V
C133	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C134	1-124-589-11	ELECT 47MF	20%	10V
C136	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C137	1-135-093-91	TANTAL. CHIP 10MF	20%	16V
C138	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C139	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C140	1-135-079-21	TANTAL. CHIP 3.3MF	20%	35V
C141	1-135-079-21	TANTAL. CHIP 3.3MF	20%	35V
C147	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C150	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C151	1-135-093-91	TANTAL. CHIP 10MF	20%	16V
C152	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C153	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C154	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C155	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C156	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C157	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C158	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C159	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C160	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C161	1-163-038-00	CERAMIC CHIP 0.1MF		25V

CONNECTOR

Ref.No	Part No.	Description	Remark
CN101	1-566-259-11	CONNECTOR, BOARD TO BOARD 13P	
CN102	1-565-847-11	SOCKET, CONNECTOR 12P	
CN103	*1-564-027-00	PIN, CONNECTOR 2P	

DIODE

Ref.No	Part No.	Description	Remark
D101	8-719-100-05	DIODE 1SS193	
D102	8-719-938-75	DIODE SB05-05CP	
D103	8-719-100-05	DIODE 1SS193	
D104	8-719-100-05	DIODE 1SS193	
D105	8-719-100-05	DIODE 1SS193	
D106	8-719-100-05	DIODE 1SS193	
D107	8-719-100-05	DIODE 1SS193	
D108	⚠8-719-105-82	DIODE RD5.1M-B2	
D109	8-719-105-90	DIODE RD5.6M-B1	
D120	8-719-100-05	DIODE 1SS193	

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FUSE

Ref.No	Part No.	Description	Remark
F101	⚠1-532-778-21	FUSE, MICRO (SECONDARY) 1.6A	
F102	⚠1-532-778-21	FUSE, MICRO (SECONDARY) 1.6A	
F103	⚠1-532-778-21	FUSE, MICRO (SECONDARY) 1.6A	
F104	⚠1-532-778-21	FUSE, MICRO (SECONDARY) 1.6A	

IC

Ref.No	Part No.	Description	Remark
IC101	8-759-945-17	IC MB3775PF	
IC102	8-759-945-44	IC BA6161F	

COIL

Ref.No	Part No.	Description	Remark
L101	1-424-104-11	COIL, CHOKE 10UH	
L102	1-424-104-11	COIL, CHOKE 10UH	
L103	1-410-690-11	COIL, CHOKE 22UH	
L104	1-410-626-11	COIL, CHOKE 47UH	
L105	1-410-658-21	INDUCTOR CHIP 220UH	
L106	1-410-377-11	INDUCTOR CHIP 4.7UH	
L107	1-410-377-11	INDUCTOR CHIP 4.7UH	
L108	1-410-377-11	INDUCTOR CHIP 4.7UH	
L109	1-410-627-11	COIL, CHOKE 100UH	
L110	1-412-075-11	COIL, CHOKE 2.4MMH	
L111	1-410-385-11	INDUCTOR CHIP 22UH	
L112	1-410-627-11	COIL, CHOKE 100UH	
L113	1-410-337-11	INDUCTOR 1UH	
L114	1-410-377-11	INDUCTOR CHIP 4.7UH	
L115	1-410-377-11	INDUCTOR CHIP 4.7UH	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q101	8-729-100-66	TRANSISTOR 2SC1623	
Q104	8-729-901-01	TRANSISTOR DTC144EK	
Q105	⚠8-729-162-44	TRANSISTOR 2SB624-V4	
Q106	⚠8-729-805-25	TRANSISTOR 2SB1121	
Q107	8-729-100-66	TRANSISTOR 2SC1623	
Q108	⚠8-729-805-25	TRANSISTOR 2SB1121	
Q109	8-729-900-53	TRANSISTOR DTC114EK	
Q110	⚠8-729-162-44	TRANSISTOR 2SB624-V4	
Q111	8-729-900-53	TRANSISTOR DTC114EK	
Q114	⚠8-729-805-25	TRANSISTOR 2SB1121	
Q115	8-729-901-01	TRANSISTOR DTC144EK	
Q116	8-729-100-66	TRANSISTOR 2SC1623	

RESISTOR

Ref.No	Part No.	Description				Remark
R101	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R102	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R104	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R105	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R106	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R107	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R108	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R109	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R110	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R111	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R112	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R114	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R115	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R116	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R117	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R118	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R119	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R120	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R121	1-216-748-11	METAL GLAZE	39K	5%	1/10W	
R122	1-216-009-00	METAL GLAZE	22	5%	1/10W	
R123	1-216-009-00	METAL GLAZE	22	5%	1/10W	
R124	1-216-009-00	METAL GLAZE	22	5%	1/10W	
R125	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R126	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R127	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R128	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R129	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R131	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R132	1-216-080-00	METAL GLAZE	20K	5%	1/10W	
R133	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R134	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R150	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R151	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R170	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R191	1-216-097-00	METAL GLAZE	100K	5%	1/10W	

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV101	1-230-869-11	RES, ADJ, METAL GLAZE 4.7K	
RV102	1-230-867-11	RES, ADJ, METAL GLAZE 1K	
RV103	1-230-868-11	RES, ADJ, METAL GLAZE 2.2K	

RELAY

Ref.No	Part No.	Description	Remark
RY101	1-515-585-11	RELAY	

TRANSFORMER

Ref.No	Part No.	Description	Remark
T101	1-449-412-11	TRANSFORMER, CONVERTER	

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Ref.No	Part No.	Description	Remark
	*A-7061-462-A	SV-35 BOARD, COMPLETE (Ref.No.2000 series) **********************	
	1-466-066-11	CCD-2HDL BLOCK	
	1-628-035-11	FP-150 FLEXIBLE BOARD	
	*3-730-102-01	INSULATOR (A), TU	

CAPACITOR

Ref.No	Part No.	Description			Remark
C001	1-135-166-21	TANTAL. CHIP 47MF	20%	6.3V	
C002	1-135-177-91	TANTAL. CHIP 1MF	20%	25V	
C003	1-135-166-21	TANTAL. CHIP 47MF	20%	6.3V	
C004	1-135-155-21	TANTAL. CHIP 4.7MF	20%	16V	
C005	1-126-206-11	ELECT 100MF	20%	6.3V	
C006	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V	
C007	1-135-166-21	TANTAL. CHIP 47MF	20%	6.3V	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description		Remark
C008	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C009	1-135-155-21	TANTAL. CHIP 4.7MF	20%	16V
C010	1-126-206-11	ELECT 100MF	20%	6.3V
C011	1-135-166-21	TANTAL. CHIP 47MF	20%	10V
C012	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C013	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C014	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C015	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C016	1-162-969-11	CERAMIC CHIP 0.0068MF	10%	25V
C018	1-135-177-91	TANTAL. CHIP 1MF	20%	25V
C019	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C020	1-162-969-11	CERAMIC CHIP 0.0068MF	10%	25V
C021	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C023	1-126-206-11	ELECT 100MF	20%	6.3V
C025	1-135-149-21	TANTAL. CHIP 2.2MF	20%	10V
C026	1-135-166-21	TANTAL. CHIP 47MF	20%	10V
C027	1-135-161-21	TANTAL. CHIP 22MF	20%	10V
C028	1-135-166-21	TANTAL. CHIP 47MF	20%	6.3V
C029	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C030	1-135-166-21	TANTAL. CHIP 47MF	20%	6.3V
C031	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C032	1-126-206-11	ELECT 100MF	20%	6.3V
C051	1-162-968-11	CERAMIC CHIP 0.0047MF	10%	50V
C052	1-162-968-11	CERAMIC CHIP 0.0047MF	10%	50V
C101	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C102	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C103	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C104	1-135-159-21	ELECT 10MF	20%	20V
C105	1-135-149-21	TANTAL. CHIP 2.2MF	20%	10V
C106	1-135-149-21	TANTAL. CHIP 2.2MF	20%	10V
C107	1-135-149-21	TANTAL. CHIP 2.2MF	20%	10V
C108	1-135-149-21	TANTAL. CHIP 2.2MF	20%	10V
C109	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C110	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C111	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C112	1-135-149-21	TANTAL. CHIP 2.2MF	20%	10V
C113	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C114	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C115	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C116	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C117	1-162-916-11	CERAMIC CHIP 12PF	5%	50V
C118	1-162-916-11	CERAMIC CHIP 12PF	5%	50V
C119	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C120	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C121	1-162-949-11	CERAMIC CHIP 47PF	5%	50V
C122	1-162-949-11	CERAMIC CHIP 47PF	5%	50V
C123	1-162-949-11	CERAMIC CHIP 47PF	5%	50V
C124	1-162-959-11	CERAMIC CHIP 330PF	5%	50V
C125	1-162-959-11	CERAMIC CHIP 330PF	5%	50V
C201	1-162-966-11	CERAMIC CHIP 0.0022MF	10%	50V
C202	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C203	1-163-133-00	CERAMIC CHIP 470PF	10%	50V
C204	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C205	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C206	1-135-177-91	TANTAL. CHIP 1MF	20%	25V
C207	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C208	1-162-960-11	CERAMIC CHIP 220PF	10%	50V
C209	1-162-968-11	CERAMIC CHIP 0.0047MF	10%	50V
C210	1-162-967-11	CERAMIC CHIP 0.0033MF	10%	50V
C211	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C212	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C213	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V
C214	1-163-133-00	CERAMIC CHIP 470PF	5%	50V
C215	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V
C216	1-162-950-11	CERAMIC CHIP 56PF	5%	50V
C217	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C218	1-162-965-11	CERAMIC CHIP 0.0015MF	10%	50V
C219	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C220	1-162-921-11	CERAMIC CHIP 33PF	5%	50V
C221	1-162-921-11	CERAMIC CHIP 33PF	5%	50V
C222	1-163-037-11	CERAMIC CHIP 0.022MF	10%	25V
C223	1-163-037-11	CERAMIC CHIP 0.022MF	10%	25V
C224	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V
C225	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V
C226	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C227	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C230	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C231	1-162-959-11	CERAMIC CHIP 330PF	5%	50V
C232	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C236	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C237	1-135-155-21	TANTAL. CHIP 4.7MF	20%	16V
C298	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V
C299	1-163-059-00	CERAMIC CHIP 0.01MF		50V
C301	1-135-159-21	TANTAL. CHIP 10MF	10%	16V
C302	1-136-718-11	ELECT 0.1MF	5%	25V
C305	1-162-916-11	CERAMIC CHIP 12PF	5%	50V
C306	1-162-919-11	CERAMIC CHIP 22PF	5%	50V
C307	1-127-489-00	ELECT(SOLID) 10MF	20%	10V
C308	1-163-077-00	CERAMIC CHIP 0.1MF	10%	25V
C309	1-163-123-00	CERAMIC CHIP 180PF	5%	50V
C310	1-163-077-00	CERAMIC CHIP 0.1MF	10%	25V
C311	1-163-077-00	CERAMIC CHIP 0.1MF	10%	25V
C312	1-163-077-00	CERAMIC CHIP 0.1MF	10%	25V
C313	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C314	1-162-915-11	CERAMIC CHIP 10PF	0.5PF	50V
C315	1-162-919-11	CERAMIC CHIP 22PF	5%	50V
C316	1-127-489-00	ELECT(SOLID) 10MF	20%	10V
C317	1-135-177-91	TANTAL. CHIP 1MF	20%	25V
C318	1-135-177-91	TANTAL. CHIP 1MF	20%	25V
C319	1-124-779-00	ELECT 10MF	20%	16V
C320	1-135-159-21	ELECT 10MF	20%	20V
C321	1-124-779-00	ELECT 10MF	20%	16V
C322	1-135-177-91	TANTAL. CHIP 1MF	20%	25V
C323	1-135-154-21	TANTAL. CHIP 3.3MF	20%	20V
C324	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C325	1-124-779-00	ELECT 10MF	20%	16V

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description		Remark
C326	1-135-149-21	TANTAL. CHIP 2.2MF	20%	10V
C327	1-135-150-21	TANTAL. CHIP 3.3MF	20%	6.3V
C328	1-163-077-00	CERAMIC CHIP 0.1MF	10%	25V
C329	1-163-077-00	CERAMIC CHIP 0.1MF	10%	25V
C330	1-163-077-00	CERAMIC CHIP 0.1MF	10%	25V
C331	1-135-159-21	TANTAL. CHIP 10MF	10%	16V
C332	1-127-489-00	ELECT(SOLID) 10MF	20%	10V
C334	1-135-145-11	TANTAL. CHIP 0.47MF	20%	25V
C336	1-163-019-00	CERAMIC CHIP 0.0068MF	10%	50V
C337	1-163-077-00	CERAMIC CHIP 0.1MF	10%	25V
C338	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C339	1-162-638-11	CERAMIC CHIP 1MF		16V
C340	1-127-489-00	ELECT(SOLID) 10MF	20%	10V
C343	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C345	1-135-177-91	TANTAL. CHIP 1MF	20%	25V
C346	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C501	1-124-778-00	ELECT 22MF	20%	6.3V
C502	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C503	1-124-778-00	ELECT 22MF	20%	6.3V
C504	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C505	1-124-778-00	ELECT 22MF	20%	6.3V
C506	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C507	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C508	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C509	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C510	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C511	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C512	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C513	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C514	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C515	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C516	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C517	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C518	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C519	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C520	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C521	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C522	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C523	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C524	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C525	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C526	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C527	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C528	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C529	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C530	1-162-965-11	CERAMIC CHIP 0.0015MF	10%	50V
C531	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C532	1-162-949-11	CERAMIC CHIP 47PF	5%	50V
C533	1-124-778-00	ELECT 22MF	20%	6.3V
C534	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C535	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C536	1-162-995-11	CERAMIC CHIP 0.022MF		50V
C539	1-162-638-11	CERAMIC CHIP 1MF		16V
C551	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C552	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C553	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C554	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C555	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C581	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V
C582	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C583	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V
C584	1-162-953-11	CERAMIC CHIP 100PF	5%	50V
C585	1-162-953-11	CERAMIC CHIP 100PF	5%	50V
C586	1-162-955-11	CERAMIC CHIP 150PF	5%	50V
C587	1-162-952-11	CERAMIC CHIP 82PF	5%	50V
C599	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V
C600	1-124-967-11	ELECT 10MF	20%	10V
C601	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C602	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C603	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C604	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C605	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C606	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V
C607	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C608	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C609	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C610	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C611	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C615	1-162-958-11	CERAMIC CHIP 270PF	5%	50V
C616	1-162-941-11	CERAMIC CHIP 10PF	0.5PF	50V
C617	1-162-950-11	CERAMIC CHIP 56PF	5%	50V
C618	1-135-091-00	TANTAL. CHIP 1MF	20%	16V
C619	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C620	1-162-995-11	CERAMIC CHIP 0.022MF		50V
C621	1-163-133-00	CERAMIC CHIP 470PF	5%	50V
C622	1-164-145-11	CERAMIC CHIP 390PF	5%	50V
C623	1-162-955-11	CERAMIC CHIP 150PF	5%	50V
C626	1-162-953-11	CERAMIC CHIP 100PF	5%	50V
C628	1-162-953-11	CERAMIC CHIP 100PF	5%	50V
C630	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C631	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C632	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C634	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C635	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C636	1-162-939-11	CERAMIC CHIP 8PF	0.5PF	50V
C637	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C639	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C641	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C642	1-135-145-11	TANTAL. CHIP 0.47MF	20%	25V
C643	1-162-957-11	CERAMIC CHIP 220PF	5%	50V
C644	1-162-951-11	CERAMIC CHIP 68PF	5%	50V
C646	1-135-091-00	TANTAL. CHIP 1MF	20%	16V
C647	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C648	1-135-091-00	TANTAL. CHIP 1MF	20%	16V
C649	1-135-091-00	TANTAL. CHIP 1MF	20%	16V
C650	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description		Remark
C651	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C652	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C653	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C654	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C658	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C659	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C660	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C701	1-135-161-21	TANTAL. CHIP 22MF	20%	10V
C702	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C703	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C704	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C705	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C706	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C707	1-135-145-11	TANTAL. CHIP 0.47MF	20%	25V
C708	1-135-161-21	TANTAL. CHIP 22MF	20%	10V
C709	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C710	1-126-206-11	ELECT 100MF	20%	6.3V
C711	1-135-153-91	TANTAL. CHIP 2.2MF	20%	25V
C712	1-135-146-21	TANTAL. CHIP 0.68MF	20%	25V
C713	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C714	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C715	1-135-145-11	TANTAL. CHIP 0.47MF	20%	25V
C716	1-135-162-21	TANTAL. CHIP 33MF	20%	6.3V
C717	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C718	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C719	1-135-145-11	TANTAL. CHIP 0.47MF	20%	25V
C720	1-135-145-11	TANTAL. CHIP 0.47MF	20%	25V
C721	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C800	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C801	1-124-778-00	ELECT 22MF	20%	6.3V
C802	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C803	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C804	1-162-949-11	CERAMIC CHIP 47PF	5%	50V
C805	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C806	1-162-952-11	CERAMIC CHIP 82PF	5%	50V
C807	1-162-967-11	CERAMIC CHIP 0.0033MF	10%	50V
C808	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C809	1-162-948-11	CERAMIC CHIP 39PF	5%	50V
C810	1-162-943-11	CERAMIC CHIP 15PF	5%	50V
C811	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C812	1-162-956-11	CERAMIC CHIP 180PF	5%	50V
C813	1-163-114-00	CERAMIC CHIP 75PF	5%	50V
C814	1-162-949-11	CERAMIC CHIP 47PF	5%	50V
C850	1-163-034-00	CERAMIC CHIP 0.033MF		50V
C851	1-162-951-11	CERAMIC CHIP 68PF	5%	50V
C852	1-162-966-11	CERAMIC CHIP 0.0022MF	10%	50V
C853	1-162-947-11	CERAMIC CHIP 33PF	5%	50V
C855	1-162-958-11	CERAMIC CHIP 270PF	5%	50V
C856	1-163-037-11	CERAMIC CHIP 0.022MF	10%	25V
C857	1-163-037-11	CERAMIC CHIP 0.022MF	10%	25V
C858	1-163-037-11	CERAMIC CHIP 0.022MF	10%	25V
C860	1-162-942-11	CERAMIC CHIP 12PF	5%	50V
C862	1-163-037-11	CERAMIC CHIP 0.022MF	10%	25V

Ref.No	Part No.	Description		Remark
C864	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C865	1-162-950-11	CERAMIC CHIP 56PF	5%	50V
C866	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C867	1-162-949-11	CERAMIC CHIP 47PF	5%	50V
C868	1-163-133-00	CERAMIC CHIP 470PF	5%	50V
C869	1-162-955-11	CERAMIC CHIP 150PF	5%	50V
C870	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C871	1-162-938-11	CERAMIC CHIP 7PF	0.5PF	50V
C901	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C902	1-162-941-11	CERAMIC CHIP 10PF	0.5PF	50V
C903	1-162-953-11	CERAMIC CHIP 100PF	5%	50V
C904	1-135-091-00	TANTAL. CHIP 1MF	20%	16V
C905	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C906	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V
C907	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C908	1-135-155-21	TANTAL. CHIP 4.7MF	20%	10V
C909	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C910	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C911	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C912	1-163-118-00	CERAMIC CHIP 110PF	5%	50V
C913	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V
C914	1-135-155-21	TANTAL. CHIP 4.7MF	20%	10V
C915	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V
C916	1-162-934-11	CERAMIC CHIP 3PF	0.25PF	50V
C917	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C918	1-162-974-11	CERAMIC CHIP 0.01MF		50V

FILTER

CF600	1-577-162-11	FILTER, CERAMIC

CONNECTOR

CN001	*1-565-541-11	PIN, CONNECTOR (PC BOARD) 2P
CN002	*1-565-541-11	PIN, CONNECTOR (PC BOARD) 2P
CN004	1-565-073-11	SOCKET, CONNECTOR 16P
CN005	1-563-686-11	CONNECTOR, BOARD TO BOARD 13P
CN006	1-566-534-11	CONNECTOR, FPC (ZIF) 18P
CN007	*1-565-541-21	PIN, CONNECTOR (PC BOARD) 2P
CN008	*1-566-197-21	PIN, CONNECTOR (PC BOARD) 4P
CN009	*1-566-197-61	PIN, CONNECTOR (PC BOARD) 4P
CN010	1-565-850-11	SOCKET, CONNECTOR 15P
CN014	1-506-471-11	PIN, CONNECTOR 6P
CN015	1-506-468-11	PIN, CONNECTOR 3P
CN016	1-566-530-11	CONNECTOR, FPC (ZIF) 14P
CN017	*1-565-542-21	PIN, CONNECTOR (PC BOARD) 3P
CN018	1-506-470-11	PIN, CONNECTOR 5P

DIODE

D001	8-719-100-05	DIODE 1SS193
D002	8-719-101-23	DIODE 1SS123
D003	8-719-105-28	DIODE RD2.4M-B
D080	8-719-941-86	DIODE DAN202UT106
D101	8-719-941-89	DIODE DA106U

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description	Remark
D102	8-719-941-89	DIODE DA106U	
D103	8-719-941-09	DIODE DAP202U	
D104	8-719-404-40	DIODE MA121	
D105	8-719-941-89	DIODE DA106U	
D106	8-719-105-90	DIODE RD5.6M-B1	
D107	8-719-404-40	DIODE MA121	
D108	8-719-404-40	DIODE MA121	
D109	8-719-404-40	DIODE MA121	
D110	8-719-404-40	DIODE MA121	
D111	8-719-941-09	DIODE DAP202U	
D112	8-719-941-09	DIODE DAP202U	
D115	8-719-941-89	DIODE DA106U	
D201	8-719-941-89	DIODE DA106U	
D301	8-719-938-75	DIODE SB05-05CP	
D302	8-719-938-75	DIODE SB05-05CP	
D303	8-719-941-09	DIODE DAP202U	
D600	8-719-101-23	DIODE 1SS123	
D601	8-719-404-40	DIODE MA121	
D850	8-719-101-23	DIODE 1SS123	
D900	8-719-100-05	DIODE 1S2837	
D901	8-719-100-05	DIODE 1S2837	
		FERRITE BEAD	
FB101	1-543-256-11	BEAD, FERRITE	
FB102	1-543-256-11	BEAD, FERRITE	
FB103	1-216-296-00	METAL GLAZE 0 5% 1/8W	
FB201	1-543-256-11	BEAD, FERRITE	
		FILTER	
FL001	1-236-145-11	FILTER, BAND PASS	
FL600	1-409-446-21	FILTER, TRAP	
FL601	1-236-186-21	FILTER, BAND PASS	
FL900	1-236-188-21	FILTER, BAND PASS	
		IC	
HIC001	8-741-150-50	IC SBX1505	
IC001	8-759-701-94	IC NJM2073M	
IC101	8-752-807-11	IC CXP80116-080Q	
IC102	8-759-100-94	IC UPC358G2	
IC103	8-759-937-56	IC S-8054ALB-LM-S	
IC104	8-759-940-79	IC S-81350AG	
IC201	8-759-100-94	IC UPC358G2	
IC202	8-759-209-53	IC CXA1204Q	
IC301	8-759-804-72	IC LB1631M	
IC302	8-759-100-94	IC UPC358G2	
IC303	8-759-100-94	IC UPC358G2	
IC304	8-759-202-45	IC CX20114	
IC305	8-759-945-17	IC MB3775PF	
IC306	8-759-107-68	IC CX20115A	
IC307	8-759-805-06	IC CXA1127M	
IC501	8-752-033-38	IC CXA1202R	
IC600	8-752-031-46	IC CXA1200Q	
IC701	8-752-033-40	IC CXA1201Q	

Ref.No	Part No.	Description	Remark
IC900	8-759-605-61	IC CXA1203N	
		JACK	
J001	1-563-282-11	JACK, SMALL TYPE (EARPHONE)	
		COIL	
L001	1-410-391-11	INDUCTOR CHIP 68UH	
L180	1-410-369-11	INDUCTOR CHIP 1UH	
L201	1-408-795-21	INDUCTOR CHIP 330UH	
L202	1-412-121-11	INDUCTOR 100UH	
L301	1-424-106-11	COIL, CHOKE 47UH	
L302	1-424-106-11	COIL, CHOKE 47UH	
L303	1-424-104-11	COIL, CHOKE 10UH	
L304	1-424-104-11	COIL, CHOKE 10UH	
L305	1-410-337-11	INDUCTOR 1UH	
L307	1-408-789-21	INDUCTOR CHIP 100UH	
L501	1-408-777-00	INDUCTOR CHIP 10UH	
L502	1-408-791-00	INDUCTOR CHIP 150UH	
L503	1-408-791-00	INDUCTOR CHIP 150UH	
L551	1-408-777-00	INDUCTOR CHIP 10UH	
L581	1-412-138-21	INDUCTOR CHIP 100UH	
L582	1-412-137-21	INDUCTOR CHIP 10UH	
L600	1-408-777-00	INDUCTOR CHIP 10UH	
L602	1-408-783-00	INDUCTOR CHIP 33UH	
L603	1-408-788-21	INDUCTOR CHIP 82UH	
L604	1-408-784-11	INDUCTOR CHIP 39UH	
L605	1-408-780-21	INDUCTOR CHIP 18UH	
L606	1-408-790-00	INDUCTOR CHIP 120UH	
L608	1-408-789-21	INDUCTOR CHIP 100UH	
L611	1-408-777-00	INDUCTOR CHIP 10UH	
L701	1-408-777-00	INDUCTOR CHIP 10UH	
L702	1-408-789-21	INDUCTOR CHIP 100UH	
L703	1-408-789-21	INDUCTOR CHIP 100UH	
L800	1-408-789-21	INDUCTOR CHIP 100UH	
L801	1-408-791-00	INDUCTOR CHIP 150UH	
L802	1-408-789-21	INDUCTOR CHIP 100UH	
L803	1-408-776-00	INDUCTOR CHIP 8.2UH	
L804	1-408-795-21	INDUCTOR CHIP 330UH	
L805	1-408-790-00	INDUCTOR CHIP 120UH	
L806	1-408-789-21	INDUCTOR CHIP 100UH	
L850	1-408-773-31	INDUCTOR CHIP 4.7UH	
L851	1-408-797-11	INDUCTOR CHIP 470UH	
L852	1-408-795-21	INDUCTOR CHIP 330UH	
L854	1-408-792-00	INDUCTOR CHIP 180UH	
L855	1-408-783-00	INDUCTOR CHIP 33UH	
L858	1-408-777-00	INDUCTOR CHIP 10UH	
L859	1-408-795-21	INDUCTOR CHIP 330UH	
L860	1-408-784-11	INDUCTOR CHIP 39UH	
L900	1-408-785-21	INDUCTOR CHIP 47UH	
		TRANSISTOR	
Q001	8-729-905-35	TRANSISTOR 2SC4081-R	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
Q002	8-729-903-63	TRANSISTOR 2SD1664-R	
Q003	8-729-905-23	TRANSISTOR 2SA1576-R	
Q004	8-729-903-47	TRANSISTOR 2SB1132-Q	
Q005	8-729-905-35	TRANSISTOR 2SC4081-R	
Q051	8-729-905-35	TRANSISTOR 2SC4081-R	
Q080	8-729-905-35	TRANSISTOR 2SC4081T106R	
Q081	8-729-905-57	TRANSISTOR DTA124EUT106	
Q101	8-729-403-24	TRANSISTOR XN4210	
Q102	8-729-403-24	TRANSISTOR XN4210	
Q103	8-729-403-24	TRANSISTOR XN4210	
Q104	8-729-403-24	TRANSISTOR XN4210	
Q105	8-729-403-24	TRANSISTOR XN4210	
Q106	8-729-403-24	TRANSISTOR XN4210	
Q107	8-729-905-18	TRANSISTOR DTC144EU	
Q108	8-729-905-12	TRANSISTOR DTA144EU	
Q109	8-729-905-18	TRANSISTOR DTC144EU	
Q110	8-729-905-23	TRANSISTOR 2SA1576-R	
Q111	8-729-905-23	TRANSISTOR 2SA1576-R	
Q112	8-729-903-63	TRANSISTOR 2SD1664-R	
Q113	8-729-905-12	TRANSISTOR DTA144EU	
Q114	8-729-905-18	TRANSISTOR DTC144EU	
Q115	8-729-907-00	TRANSISTOR DTC114EU	
Q116	8-729-902-96	TRANSISTOR FMS1	
Q117	8-729-903-82	TRANSISTOR FMW2	
Q118	8-729-903-10	TRANSISTOR FMW1	
Q119	8-729-903-10	TRANSISTOR FMW1	
Q120	8-729-905-18	TRANSISTOR DTC144EU	
Q121	8-729-905-18	TRANSISTOR DTC144EU	
Q122	8-729-905-18	TRANSISTOR DTC144EU	
Q123	8-729-905-18	TRANSISTOR DTC144EU	
Q124	8-729-903-10	TRANSISTOR FMW1	
Q125	8-729-905-12	TRANSISTOR DTA144EU	
Q126	8-729-905-18	TRANSISTOR DTC144EU	
Q127	8-729-905-18	TRANSISTOR DTC144EU	
Q128	8-729-905-35	TRANSISTOR 2SC4081-R	
Q201	8-729-905-35	TRANSISTOR 2SC4081-R	
Q202	8-729-905-23	TRANSISTOR 2SA1576-R	
Q203	8-729-905-35	TRANSISTOR 2SC4081-R	
Q204	8-729-905-35	TRANSISTOR 2SC4081-R	
Q205	8-729-905-18	TRANSISTOR DTC144EU	
Q206	8-729-905-23	TRANSISTOR 2SA1576-R	
Q207	8-729-905-35	TRANSISTOR 2SC4081-R	
Q208	8-729-905-23	TRANSISTOR 2SA1576-R	
Q209	8-729-905-18	TRANSISTOR DTC144EU	
Q301	8-729-905-35	TRANSISTOR 2SC4081-R	
Q302	8-729-111-14	TRANSISTOR 2SA1385-Z-L	
Q303	8-729-905-35	TRANSISTOR 2SC4081-R	
Q304	8-729-805-27	TRANSISTOR 2SB1121-U	
Q305	8-729-905-23	TRANSISTOR 2SA1576-R	
Q306	8-729-805-27	TRANSISTOR 2SB1121-U	
Q309	8-729-905-18	TRANSISTOR DTC144EU	
Q310	8-729-905-57	TRANSISTOR DTA124EU	
Q311	8-729-905-35	TRANSISTOR 2SC4081-R	

Ref.No	Part No.	Description	Remark
Q312	8-729-905-62	TRANSISTOR DTC124EU	
Q313	8-729-905-35	TRANSISTOR 2SC4081-R	
Q314	8-729-902-96	TRANSISTOR FMS1	
Q316	8-729-905-18	TRANSISTOR DTC144EU	
Q501	8-729-905-12	TRANSISTOR DTA144EU	
Q503	8-729-905-18	TRANSISTOR DTC144EU	
Q551	8-729-905-35	TRANSISTOR 2SC4081-R	
Q552	8-729-905-35	TRANSISTOR 2SC4081-R	
Q581	8-729-100-76	TRANSISTOR 2SA812-M6	
Q582	8-729-173-38	TRANSISTOR 2SA733-K	
Q604	8-729-905-35	TRANSISTOR 2SC4081-R	
Q605	8-729-905-35	TRANSISTOR 2SC4081-R	
Q606	8-729-905-35	TRANSISTOR 2SC4081-R	
Q607	8-729-905-35	TRANSISTOR 2SC4081-R	
Q608	8-729-905-35	TRANSISTOR 2SC4081-R	
Q609	8-729-907-46	TRANSISTOR IMZ1-T	
Q610	8-729-905-35	TRANSISTOR 2SC4081-R	
Q611	8-729-905-35	TRANSISTOR 2SC4081-R	
Q612	8-729-905-23	TRANSISTOR 2SA1576-R	
Q613	8-729-905-35	TRANSISTOR 2SC4081-R	
Q614	8-729-905-35	TRANSISTOR 2SC4081-R	
Q615	8-729-905-35	TRANSISTOR 2SC4081-R	
Q616	8-729-905-35	TRANSISTOR 2SC4081-R	
Q617	8-729-905-23	TRANSISTOR 2SA1576-R	
Q701	8-729-905-35	TRANSISTOR 2SC4081-R	
Q702	8-729-162-44	TRANSISTOR 2SB624-V4	
Q704	8-729-905-23	TRANSISTOR 2SA1576-R	
Q800	8-729-905-23	TRANSISTOR 2SA1576-R	
Q801	8-729-905-18	TRANSISTOR DTC144EU	
Q802	8-729-905-23	TRANSISTOR 2SA1576-R	
Q803	8-729-905-23	TRANSISTOR 2SA1576-R	
Q804	8-729-905-35	TRANSISTOR 2SC4081-R	
Q805	8-729-905-35	TRANSISTOR 2SC4081-R	
Q806	8-729-905-23	TRANSISTOR 2SA1576-R	
Q850	8-729-905-35	TRANSISTOR 2SC4081-R	
Q851	8-729-905-35	TRANSISTOR 2SC4081-R	
Q853	8-729-905-35	TRANSISTOR 2SC4081-R	
Q854	8-729-905-12	TRANSISTOR DTA144EU	
Q855	8-729-905-18	TRANSISTOR DTC144EU	
Q856	8-729-905-35	TRANSISTOR 2SC4081-R	
Q857	8-729-905-23	TRANSISTOR 2SA1576-R	
Q900	8-729-920-48	TRANSISTOR IMH2	
Q902	8-729-905-18	TRANSISTOR DTC144EU	
Q903	8-729-905-35	TRANSISTOR 2SC4081-R	
Q904	8-729-905-35	TRANSISTOR 2SC4081-R	
Q905	8-729-905-12	TRANSISTOR DTA144EU	
		RESISTOR	
R001	1-216-841-11	METAL GLAZE 47K 5% 1/16W	
R002	1-216-827-11	METAL GLAZE 3.3K 5% 1/16W	
R003	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R004	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R005	1-216-820-11	METAL GLAZE 820 5% 1/16W	

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description				Remark
R008	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R009	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R010	1-216-789-11	METAL GLAZE	2.2	5%	1/16W	
R011	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R012	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R013	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R014	1-216-843-11	METAL GLAZE	68K	5%	1/16W	
R015	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R018	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R019	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R020	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R021	1-216-819-11	METAL GLAZE	680	5%	1/16W	
R022	1-216-838-11	METAL GLAZE	27K	5%	1/16W	
R023	1-216-832-11	METAL GLAZE	8.2K	5%	1/16W	
R024	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R025	1-216-818-11	METAL GLAZE	560	5%	1/16W	
R026	1-216-828-11	METAL GLAZE	3.9K	5%	1/16W	
R027	1-216-849-11	METAL GLAZE	220K	5%	1/16W	
R028	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R029	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R030	1-216-819-11	METAL GLAZE	680	5%	1/16W	
R031	1-216-812-11	METAL GLAZE	180	5%	1/16W	
R032	1-216-812-11	METAL GLAZE	180	5%	1/16W	
R033	1-216-819-11	METAL GLAZE	680	5%	1/16W	
R034	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R037	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R038	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R039	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R040	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R041	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R042	1-216-158-00	METAL GLAZE	22	5%	1/8W	
R043	1-216-158-00	METAL GLAZE	22	5%	1/8W	
R044	1-216-789-11	METAL GLAZE	2.2	5%	1/16W	
R045	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R046	1-216-296-00	METAL GLAZE	0	5%	1/8W	
R051	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R052	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R054	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R080	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R081	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R082	1-216-842-11	METAL GLAZE	56K	5%	1/16W	
R083	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R101	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R102	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R103	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R104	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R105	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R106	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R107	1-216-192-00	METAL GLAZE	560	5%	1/8W	
R108	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R109	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R110	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R111	1-216-852-11	METAL GLAZE	390K	5%	1/16W	
R112	1-216-828-11	METAL GLAZE	3.9K	5%	1/16W	
R113	1-216-852-11	METAL GLAZE	390K	5%	1/16W	
R114	1-216-852-11	METAL GLAZE	390K	5%	1/16W	
R115	1-216-852-11	METAL GLAZE	390K	5%	1/16W	
R116	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R117	1-216-857-11	METAL GLAZE	1M	5%	1/16W	
R118	1-216-828-11	METAL GLAZE	3.9K	5%	1/16W	
R119	1-216-852-11	METAL GLAZE	390K	5%	1/16W	
R120	1-216-852-11	METAL GLAZE	390K	5%	1/16W	
R121	1-216-852-11	METAL GLAZE	390K	5%	1/16W	
R122	1-216-852-11	METAL GLAZE	390K	5%	1/16W	
R123	1-216-857-11	METAL GLAZE	1M	5%	1/16W	
R124	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R125	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R126	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R127	1-216-851-11	METAL GLAZE	330K	5%	1/16W	
R128	1-216-836-11	METAL GLAZE	18K	5%	1/16W	
R129	1-216-838-11	METAL GLAZE	27K	5%	1/16W	
R130	1-216-857-11	METAL GLAZE	1M	5%	1/16W	
R131	1-216-838-11	METAL GLAZE	27K	5%	1/16W	
R132	1-216-835-11	METAL GLAZE	15K	5%	1/16W	
R133	1-216-857-11	METAL GLAZE	1M	5%	1/16W	
R134	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R135	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R136	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R137	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R138	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R139	1-216-853-11	METAL GLAZE	470K	5%	1/16W	
R140	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R141	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R142	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R143	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R144	1-216-853-11	METAL GLAZE	470K	5%	1/16W	
R145	1-216-172-00	METAL GLAZE	82	5%	1/8W	
R146	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R147	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R148	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R149	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R150	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R151	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R152	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R153	1-216-848-11	METAL GLAZE	180K	5%	1/16W	
R154	1-216-849-11	METAL GLAZE	220K	5%	1/16W	
R155	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R156	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R157	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R158	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R159	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R160	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R161	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R162	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R163	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R164	1-216-833-11	METAL GLAZE	10K	5%	1/16W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R165	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R166	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R167	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R168	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R169	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R170	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R171	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R172	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R173	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R174	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R176	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R177	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R182	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R183	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R184	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R187	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R188	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R189	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R190	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R191	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R192	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R201	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R202	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R203	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R204	1-216-811-11	METAL GLAZE	150	5%	1/16W	
R205	1-216-811-11	METAL GLAZE	150	5%	1/16W	
R206	1-216-857-11	METAL GLAZE	1M	5%	1/16W	
R207	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R208	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W	
R209	1-216-824-11	METAL GLAZE	1.8K	5%	1/16W	
R210	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W	
R211	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R212	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R213	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R214	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R215	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R216	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R219	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R220	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R221	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R224	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R225	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R226	1-216-818-11	METAL GLAZE	560	5%	1/16W	
R227	1-216-810-11	METAL GLAZE	120	5%	1/16W	
R228	1-216-812-11	METAL GLAZE	180	5%	1/16W	
R229	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R230	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R231	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R232	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R233	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R234	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R235	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R236	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R237	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R238	1-216-857-11	METAL GLAZE	1M	5%	1/16W	
R239	1-216-822-11	METAL GLAZE	1.2K	5%	1/16W	
R240	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R241	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R242	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R250	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R251	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R252	1-216-832-11	METAL GLAZE	8.2K	5%	1/16W	
R255	1-216-820-11	METAL GLAZE	820	5%	1/16W	
R256	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R257	1-216-847-11	METAL GLAZE	150K	5%	1/16W	
R301	1-216-194-00	METAL GLAZE	680	5%	1/8W	
R302	1-216-194-00	METAL GLAZE	680	5%	1/8W	
R303	1-216-194-00	METAL GLAZE	680	5%	1/8W	
R304	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R305	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R306	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R307	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R308	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R309	1-216-830-11	METAL GLAZE	5.6K	5%	1/16W	
R310	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R312	1-216-847-11	METAL GLAZE	150K	5%	1/16W	
R315	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R316	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R317	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R318	1-216-830-11	METAL GLAZE	5.6K	5%	1/16W	
R319	1-216-824-11	METAL GLAZE	1.8K	5%	1/16W	
R320	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R321	1-216-828-11	METAL GLAZE	3.9K	5%	1/16W	
R322	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R323	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R324	1-216-828-11	METAL GLAZE	3.9K	5%	1/16W	
R325	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R326	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R327	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R328	1-216-809-11	METAL GLAZE	100	5%	1/16W	
R329	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R330	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R331	1-216-820-11	METAL GLAZE	820	5%	1/16W	
R332	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R333	1-216-847-11	METAL GLAZE	150K	5%	1/16W	
R336	1-216-830-11	METAL GLAZE	5.6K	5%	1/16W	
R337	1-216-824-11	METAL GLAZE	1.8K	5%	1/16W	
R338	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R339	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R340	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R344	1-216-836-11	METAL GLAZE	18K	5%	1/16W	
R345	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R346	1-216-847-11	METAL GLAZE	150K	5%	1/16W	
R347	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R348	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R349	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description				Remark
R350	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R360	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R369	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R370	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R371	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R372	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R373	1-216-789-11	METAL GLAZE	2.2	5%	1/16W	
R374	1-216-789-11	METAL GLAZE	2.2	5%	1/16W	
R375	1-216-789-11	METAL GLAZE	2.2	5%	1/16W	
R376	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R377	1-216-848-11	METAL GLAZE	180K	5%	1/16W	
R390	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R501	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R502	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R503	1-216-838-11	METAL GLAZE	27K	5%	1/16W	
R504	1-216-838-11	METAL GLAZE	27K	5%	1/16W	
R505	1-216-838-11	METAL GLAZE	27K	5%	1/16W	
R506	1-216-838-11	METAL GLAZE	27K	5%	1/16W	
R507	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R508	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R509	1-216-842-11	METAL GLAZE	56K	5%	1/16W	
R510	1-216-836-11	METAL GLAZE	18K	5%	1/16W	
R512	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R514	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R515	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R516	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R517	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R518	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R519	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R521	1-216-809-11	METAL GLAZE	100	5%	1/16W	
R522	1-216-847-11	METAL GLAZE	150K	5%	1/16W	
R523	1-216-857-11	METAL GLAZE	1M	5%	1/16W	
R524	1-216-847-11	METAL GLAZE	150K	5%	1/16W	
R525	1-216-842-11	METAL GLAZE	56K	5%	1/16W	
R526	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R532	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R533	1-216-809-11	METAL GLAZE	100	5%	1/16W	
R551	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R552	1-216-835-11	METAL GLAZE	15K	5%	1/16W	
R553	1-216-820-11	METAL GLAZE	820	5%	1/16W	
R554	1-216-816-11	METAL GLAZE	390	5%	1/16W	
R555	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R556	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R581	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R582	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R583	1-216-810-11	METAL GLAZE	120	5%	1/16W	
R584	1-216-813-11	METAL GLAZE	220	5%	1/16W	
R585	1-216-793-11	METAL GLAZE	4.7	5%	1/16W	
R587	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R600	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R601	1-216-822-11	METAL GLAZE	1.2K	5%	1/16W	
R602	1-216-858-91	METAL GLAZE	1.2M	5%	1/16W	
R605	1-216-844-11	METAL GLAZE	82K	5%	1/16W	

Ref.No	Part No.	Description				Remark
R606	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R607	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R608	1-216-663-11	METAL CHIP	3.3K	0.50%	1/10W	
R614	1-216-818-11	METAL GLAZE	560	5%	1/16W	
R615	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R617	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R618	1-216-807-11	METAL GLAZE	68	5%	1/16W	
R619	1-216-822-11	METAL GLAZE	1.2K	5%	1/16W	
R620	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R621	1-216-836-11	METAL GLAZE	18K	5%	1/16W	
R622	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R623	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R624	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R625	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R626	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R627	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R628	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R629	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R630	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R631	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W	
R632	1-216-832-11	METAL GLAZE	8.2K	5%	1/16W	
R633	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R634	1-216-830-11	METAL GLAZE	5.6K	5%	1/16W	
R638	1-216-820-11	METAL GLAZE	820	5%	1/16W	
R639	1-216-820-11	METAL GLAZE	820	5%	1/16W	
R640	1-216-853-11	METAL GLAZE	470K	5%	1/16W	
R641	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R642	1-216-810-11	METAL GLAZE	120	5%	1/16W	
R644	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R645	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R646	1-216-811-11	METAL GLAZE	150	5%	1/16W	
R647	1-216-857-11	METAL GLAZE	1M	5%	1/16W	
R648	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R649	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R650	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R651	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R652	1-216-820-11	METAL GLAZE	820	5%	1/16W	
R654	1-216-823-11	METAL GLAZE	1.5K	5%	1/16W	
R655	1-216-807-11	METAL GLAZE	68	5%	1/16W	
R656	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R658	1-216-838-11	METAL GLAZE	27K	5%	1/16W	
R661	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R662	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R664	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R665	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R666	1-216-820-11	METAL GLAZE	820	5%	1/16W	
R667	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R668	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R670	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R671	1-216-819-11	METAL GLAZE	680	5%	1/16W	
R672	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R701	1-216-021-00	METAL GLAZE	68	5%	1/10W	
R702	1-216-821-11	METAL GLAZE	1K	5%	1/16W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
R703	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R704	1-216-845-11	METAL GLAZE 100K 5% 1/16W	
R705	1-216-828-11	METAL GLAZE 3.9K 5% 1/16W	
R708	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R709	1-216-836-11	METAL GLAZE 18K 5% 1/16W	
R710	1-216-830-11	METAL GLAZE 5.6K 5% 1/16W	
R711	1-216-304-11	METAL GLAZE 3.3 5% 1/10W	
R712	1-216-699-11	METAL CHIP 100K 0.50% 1/10W	
R713	1-216-022-00	METAL GLAZE 75 5% 1/10W	
R714	1-216-822-11	METAL GLAZE 1.2K 5% 1/16W	
R715	1-216-809-11	METAL GLAZE 100 5% 1/16W	
R716	1-216-839-11	METAL GLAZE 33K 5% 1/16W	
R717	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R718	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R720	1-216-857-11	METAL GLAZE 1M 5% 1/16W	
R721	1-216-857-11	METAL GLAZE 1M 5% 1/16W	
R750	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R751	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R752	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R753	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R754	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R755	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R756	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R800	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R801	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R802	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R803	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R804	1-216-818-11	METAL GLAZE 560 5% 1/16W	
R805	1-216-829-11	METAL GLAZE 4.7K 5% 1/16W	
R806	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R807	1-216-818-11	METAL GLAZE 560 5% 1/16W	
R808	1-216-809-11	METAL GLAZE 100 5% 1/16W	
R809	1-216-817-11	METAL GLAZE 470 5% 1/16W	
R810	1-216-817-11	METAL GLAZE 470 5% 1/16W	
R811	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R812	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R813	1-216-828-11	METAL GLAZE 3.9K 5% 1/16W	
R814	1-216-818-11	METAL GLAZE 560 5% 1/16W	
R815	1-216-818-11	METAL GLAZE 560 5% 1/16W	
R816	1-216-829-11	METAL GLAZE 4.7K 5% 1/16W	
R817	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R850	1-216-837-11	METAL GLAZE 22K 5% 1/16W	
R851	1-216-839-11	METAL GLAZE 33K 5% 1/16W	
R852	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R853	1-216-818-11	METAL GLAZE 560 5% 1/16W	
R854	1-216-815-11	METAL GLAZE 330 5% 1/16W	
R855	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R857	1-216-820-11	METAL GLAZE 820 5% 1/16W	
R858	1-216-834-11	METAL GLAZE 12K 5% 1/16W	
R859	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R860	1-216-817-11	METAL GLAZE 470 5% 1/16W	
R861	1-216-808-11	METAL GLAZE 82 5% 1/16W	
R862	1-216-823-11	METAL GLAZE 1.5K 5% 1/16W	
R863	1-216-824-11	METAL GLAZE 1.8K 5% 1/16W	
R864	1-216-832-11	METAL GLAZE 8.2K 5% 1/16W	
R865	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R866	1-216-836-11	METAL GLAZE 18K 5% 1/16W	
R867	1-216-836-11	METAL GLAZE 18K 5% 1/16W	
R868	1-216-816-11	METAL GLAZE 390 5% 1/16W	
R869	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R871	1-216-813-11	METAL GLAZE 220 5% 1/16W	
R872	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R873	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R874	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R875	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R876	1-216-823-11	METAL GLAZE 1.5K 5% 1/16W	
R877	1-216-819-11	METAL GLAZE 680 5% 1/16W	
R878	1-216-824-11	METAL GLAZE 1.8K 5% 1/16W	
R879	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R890	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R901	1-216-845-11	METAL GLAZE 100K 5% 1/16W	
R902	1-216-845-11	METAL GLAZE 100K 5% 1/16W	
R903	1-216-845-11	METAL GLAZE 100K 5% 1/16W	
R904	1-216-835-11	METAL GLAZE 15K 5% 1/16W	
R905	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R906	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R907	1-216-829-11	METAL GLAZE 4.7K 5% 1/16W	
R908	1-216-845-11	METAL GLAZE 100K 5% 1/16W	
R909	1-216-829-11	METAL GLAZE 4.7K 5% 1/16W	
R910	1-216-699-11	METAL CHIP 100K 0.50% 1/10W	
R911	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R912	1-216-829-11	METAL GLAZE 4.7K 5% 1/16W	
R913	1-216-827-11	METAL GLAZE 3.3K 5% 1/16W	
R914	1-216-829-11	METAL GLAZE 4.7K 5% 1/16W	
R915	1-216-841-11	METAL GLAZE 47K 5% 1/16W	
R916	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R917	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R918	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R919	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R920	1-216-839-11	METAL GLAZE 33K 5% 1/16W	
R921	1-216-836-11	METAL GLAZE 18K 5% 1/16W	
R922	1-216-829-11	METAL GLAZE 4.7K 5% 1/16W	
R923	1-216-864-11	METAL GLAZE 0 5% 1/16W	

VARIABLE RESISTOR

RV101	1-230-874-11	RES, ADJ, METAL GLAZE 100K	
RV102	1-230-874-11	RES, ADJ, METAL GLAZE 100K	
RV103	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
RV104	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
RV201	1-230-870-11	RES, ADJ, METAL GLAZE 10K	
RV301	1-230-869-11	RES, ADJ, METAL GLAZE 4.7K	
RV302	1-230-876-11	RES, ADJ, METAL GLAZE 470K	
RV501	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
RV502	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
RV503	1-230-868-11	RES, ADJ, METAL GLAZE 2.2K	
RV504	1-230-868-11	RES, ADJ, METAL GLAZE 2.2K	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description		Remark
RV505	1-230-868-11	RES, ADJ, METAL GLAZE	2.2K	
RV600	1-230-870-11	RES, ADJ, METAL GLAZE	10K	
RV601	1-230-873-11	RES, ADJ, METAL GLAZE	47K	
RV602	1-230-867-11	RES, ADJ, METAL GLAZE	1K	
RV603	1-230-868-11	RES, ADJ, METAL GLAZE	2.2K	
RV604	1-230-868-11	RES, ADJ, METAL GLAZE	2.2K	
RV605	1-230-869-11	RES, ADJ, METAL GLAZE	4.7K	
RV606	1-230-867-11	RES, ADJ, METAL GLAZE	1K	
RV701	1-230-873-11	RES, ADJ, METAL GLAZE	47K	
RV800	1-230-869-11	RES, ADJ, METAL GLAZE	4.7K	
RV901	1-230-873-11	RES, ADJ, METAL GLAZE	47K	
RV902	1-230-869-11	RES, ADJ, METAL GLAZE	4.7K	
RV903	1-230-870-11	RES, ADJ, METAL GLAZE	10K	

SWITCH

S101	1-571-177-11	SWITCH, SLIDE (TV/CAMERA/LINE)
S601	1-570-114-11	SWITCH, SLIDE (VHF/UHF)
S602	1-570-114-11	SWITCH, SLIDE (SP/LP)

FLEXIBLE BOARD

W003	1-628-035-11	FP-150 FLEXIBLE BOARD

CRYSTAL

X101	1-577-116-21	VIBRATOR, CRYSTAL (16MHz)
X201	1-567-827-11	VIBRATOR, CRYSTAL (5.8MHz)
X600	1-577-117-21	VIBRATOR, CRYSTAL (4.43MHz)

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*A-7061-463-A TT-20 BOARD, COMPLETE (Ref.No.1000 series)
****
(WEST GERMANY MODEL)

*A-7061-472-A TT-20 BOARD, COMPLETE (Ref.No.1000 series)
****
(AEP, UK, E MODEL)

*3-728-908-01 CASE (MAIN), SHIELD, IC

CAPACITOR

Ref.No	Part No.	Description			Remark
C101	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C102	1-163-112-00	CERAMIC CHIP	62PF	5%	50V
C103	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C104	1-163-112-00	CERAMIC CHIP	62PF	5%	50V
C106	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C107	1-164-161-11	CERAMIC CHIP	0.0022MF		50V
C108	1-164-161-11	CERAMIC CHIP	0.0022MF		50V
C109	1-162-637-11	CERAMIC CHIP	0.47MF		16V
C110	1-126-198-11	ELECT	4.7MF	20%	35V
C111	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C112	1-164-005-11	CERAMIC CHIP	0.47MF		25V
C113	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C114	1-126-205-11	ELECT	47MF	20%	6.3V
C115	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C116	1-126-198-11	ELECT	4.7MF	20%	35V
C117	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C118	1-126-205-11	ELECT	47MF	20%	6.3V
C120	1-163-119-00	CERAMIC CHIP	120PF	5%	50V
C123	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V
C124	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C125	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C126	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V
C127	1-126-198-11	ELECT	4.7MF	20%	35V
C128	1-126-372-41	ELECT	560MF	20%	6.3V
C130	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C131	1-124-779-00	ELECT	10MF	20%	16V
C132	1-126-198-11	ELECT	4.7MF	20%	35V
C135	1-126-198-11	ELECT	4.7MF	20%	35V
C136	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C137	1-163-083-00	CERAMIC CHIP	1PF	0.25PF	50V
C138	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C139	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C140	1-124-778-00	ELECT	22MF	20%	6.3V
C141	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C142	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C143	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C144	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C145	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C146	1-126-206-11	ELECT	100MF	20%	6.3V
C147	1-124-779-00	ELECT	10MF	20%	16V
C148	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C149	1-163-036-00	CERAMIC CHIP	0.068MF		50V
C150	1-163-036-00	CERAMIC CHIP	0.068MF		50V
C151	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C152	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C157	1-163-023-00	CERAMIC CHIP	0.015MF	10%	25V
C160	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C161	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C162	1-124-779-00	ELECT	10MF	20%	16V
C164	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C165	1-163-105-00	CERAMIC CHIP	36PF	5%	50V
C166	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C167	1-163-086-00	CERAMIC CHIP	3PF	5%	50V
C168	1-163-116-00	CERAMIC CHIP	91PF	5%	50V
C170	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C201	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C202	1-163-123-00	CERAMIC CHIP	180PF	5%	50V
C203	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C301	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C302	1-136-015-00	CERAMIC CHIP	0.0033MF		50V
C303	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C304	1-135-157-21	TANTAL. CHIP	10MF	20%	6.3V
C305	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C306	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C307	1-126-206-11	ELECT	100MF	20%	6.3V
C352	1-163-111-00	CERAMIC CHIP	56PF	5%	50V
C353	1-163-104-00	CERAMIC CHIP	30PF	5%	50V
C354	1-163-021-00	CERAMIC CHIP	0.01MF		50V

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
C356	1-135-167-21	TANTAL. CHIP 68MF 20%	6.3V
C357	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C358	1-163-141-00	CERAMIC CHIP 0.001MF	50V
C371	1-163-133-00	CERAMIC CHIP 470PF 5%	50V
C372	1-163-117-00	CERAMIC CHIP 100PF 5%	50V
C373	1-163-021-00	CERAMIC CHIP 0.01MF	50V
C374	1-163-133-00	CERAMIC CHIP 470PF 5%	50V
C377	1-163-021-00	CERAMIC CHIP 0.01MF	50V
C380	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C381	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C390	1-163-141-00	CERAMIC CHIP 0.001MF	50V
C426	1-163-038-00	CERAMIC CHIP 0.1MF	25V

FILTER

Ref.No	Part No.	Description	Remark
CF101	1-567-099-00	FILTER, CERAMIC	
CF102	1-409-460-11	TRAP, CERAMIC	
CF103	1-577-346-11	DISCRIMINATOR, CERAMIC	
CF201	1-567-100-00	FILTER, CERAMIC	
CF202	1-577-345-11	DISCRIMINATOR, CERAMIC	

CONNECTOR

Ref.No	Part No.	Description	Remark
CN301	*1-566-195-11	PIN, CONNECTOR (PC BOARD) 2P	
CN302	1-565-849-11	SOCKET, CONNECTOR 11P	
CN303	1-565-212-11	CONNECTOR, FPC (ZIF) 26P	
CN305	1-565-847-11	SOCKET, CONNECTOR 12P	
CN306	1-566-530-11	CONNECTOR, FPC (ZIF) 14P	

TRIMMER

Ref.No	Part No.	Description	Remark
CV301	1-141-331-11	CAP, VAR, TRIMMER (CHIP)	
CV351	1-141-331-11	CAP, VAR, TRIMMER (CHIP)	

DIODE

Ref.No	Part No.	Description	Remark
D101	8-719-100-05	DIODE 1S2837	
D310	8-719-109-89	DIODE RD5.6EB2	
D371	8-719-100-05	DIODE 1S2837	
D401	8-719-105-82	DIODE RD5.1M-B2	

FERRITE BEAD

Ref.No	Part No.	Description	Remark
FB101	1-412-080-11	BEAD, FERRITE	
FB402	1-543-256-11	BEAD, FERRITE	
FB403	1-543-256-11	BEAD, FERRITE	
FB421	1-543-256-11	BEAD, FERRITE	

IC

Ref.No	Part No.	Description	Remark
IC101	8-759-631-35	IC M52007FP	
IC102	8-759-700-07	IC NJM2903M	
IC301	8-752-807-10	IC CXP5078-008Q	
IC302	8-759-940-33	IC S-8052ALO-LG-S	
IC303	8-759-937-56	IC S-8054ALB-LM-S	
IC351	8-759-142-46	IC UPD6142G-601	
IC371	8-759-208-18	IC TC4528BFHB	
IC372	8-759-100-93	IC UPC393G2	

JACK

Ref.No	Part No.	Description	Remark
J101	1-507-974-11	JACK (EXT ANTENNA)	

COIL

Ref.No	Part No.	Description	Remark
L101	1-410-733-11	INDUCTOR CHIP 0.22UH	
L104	1-410-415-11	INDUCTOR 4.7UH	
L105	1-410-378-21	INDUCTOR CHIP 5.6UH	
L106	1-410-372-21	INDUCTOR CHIP 1.8UH	
L107	1-410-378-21	INDUCTOR CHIP 5.6UH	
L108	1-410-943-31	INDUCTOR CHIP 12UH	
L111	1-410-369-11	INDUCTOR CHIP 1UH	
L112	1-410-385-11	INDUCTOR CHIP 22UH	
L115	1-410-385-11	INDUCTOR CHIP 22UH	
L116	1-410-211-51	INDUCTOR CHIP 39UH	
L117	1-410-216-31	INDUCTOR CHIP 100UH	
L201	1-410-387-11	INDUCTOR CHIP 33UH	
L351	1-410-388-21	INDUCTOR CHIP 39UH	
L352	1-410-167-31	INDUCTOR CHIP 820UH	
L359	1-410-369-11	INDUCTOR CHIP 1UH	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q102	8-729-100-66	TRANSISTOR 2SC1623	
Q103	8-729-100-75	TRANSISTOR 2SA812-M5	
Q104	8-729-100-66	TRANSISTOR 2SC1623	
Q105	8-729-162-44	TRANSISTOR 2SB624-V4	
Q106	8-729-900-53	TRANSISTOR DTC114EK	
Q107	8-729-100-66	TRANSISTOR 2SC1623	
Q109	8-729-901-01	TRANSISTOR DTC144EK	
Q110	8-729-901-04	TRANSISTOR DTA114EK	
Q111	8-729-901-04	TRANSISTOR DTA114EK	
Q112	8-729-100-66	TRANSISTOR 2SC1623	
Q113	8-729-601-58	TRANSISTOR 2SC3053TP-C	
Q114	8-729-100-66	TRANSISTOR 2SC1623	
Q115	8-729-900-53	TRANSISTOR DTC114EK	
Q116	8-729-900-53	TRANSISTOR DTC114EK	
Q118	8-729-920-08	TRANSISTOR DTC124TK	
Q120	8-729-100-66	TRANSISTOR 2SC1623	
Q121	8-729-100-75	TRANSISTOR 2SA812-M5	
Q122	8-729-100-66	TRANSISTOR 2SC1623	
Q201	8-729-920-08	TRANSISTOR DTC124TK	
Q202	8-729-920-08	TRANSISTOR DTC124TK	
Q203	8-729-901-00	TRANSISTOR DTC124EK	
Q204	8-729-100-66	TRANSISTOR 2SC1623	
Q301	8-729-902-96	TRANSISTOR FMS1	
Q302	8-729-100-66	TRANSISTOR 2SC1623	
Q303	8-729-100-76	TRANSISTOR 2SA812-M6	
Q304	8-729-900-53	TRANSISTOR DTC114EK	
Q305	⚠8-729-220-93	TRANSISTOR 2SK209G	
Q306	8-729-901-04	TRANSISTOR DTA114EK	
Q308	8-729-100-76	TRANSISTOR 2SA812-M6	
Q309	8-729-901-01	TRANSISTOR DTC144EK	
Q371	8-729-100-76	TRANSISTOR 2SA812-M6	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description	Remark
Q372	8-729-920-56	TRANSISTOR FMG1	
Q373	8-729-902-90	TRANSISTOR FMA4	
		RESISTOR	
R101	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W	
R102	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R103	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R104	1-216-021-00	METAL GLAZE 68 5% 1/10W	
R105	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
R106	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R107	1-216-035-00	METAL GLAZE 270 5% 1/10W	
R108	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R109	1-216-069-00	METAL GLAZE 6.8K 5% 1/10W	
R113	1-216-031-00	METAL GLAZE 180 5% 1/10W	
R115	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R119	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W	
R121	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R122	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R123	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R124	1-216-063-00	METAL GLAZE 3.9K 5% 1/10W	
R125	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W	
R126	1-216-063-00	METAL GLAZE 3.9K 5% 1/10W	
R127	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R128	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R129	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R131	1-216-079-00	METAL GLAZE 18K 5% 1/10W	
R132	1-216-099-00	METAL GLAZE 120K 5% 1/10W	
R133	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R134	1-216-111-00	METAL GLAZE 390K 5% 1/10W	
R135	1-216-079-00	METAL GLAZE 18K 5% 1/10W	
R136	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R137	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R139	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R140	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R142	1-216-035-00	METAL GLAZE 270 5% 1/10W	
R145	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R146	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R147	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R148	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R149	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R150	1-216-109-00	METAL GLAZE 330K 5% 1/10W	
R151	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R152	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R154	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R161	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R162	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R163	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R170	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R171	1-216-037-00	METAL GLAZE 330 5% 1/10W	
R172	1-216-101-00	METAL GLAZE 150K 5% 1/10W	
R173	1-216-105-00	METAL GLAZE 220K 5% 1/10W	
R174	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R175	1-216-049-00	METAL GLAZE 1K 5% 1/10W	

Ref.No	Part No.	Description	Remark
R176	1-216-069-00	METAL GLAZE 6.8K 5% 1/10W	
R177	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R178	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R179	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R180	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
R181	1-216-029-00	METAL GLAZE 150 5% 1/10W	
R182	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R183	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R184	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R185	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R186	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R187	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R201	1-216-035-00	METAL GLAZE 270 5% 1/10W	
R202	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R203	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R207	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R301	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R302	1-216-105-00	METAL GLAZE 220K 5% 1/10W	
R303	1-216-084-00	METAL GLAZE 30K 5% 1/10W	
R304	1-216-748-11	METAL GLAZE 39K 5% 1/10W	
R305	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R306	1-216-067-00	METAL GLAZE 5.6K 5% 1/10W	
R307	1-216-129-00	METAL GLAZE 2.2M 5% 1/10W	
R308	1-216-101-00	METAL GLAZE 150K 5% 1/10W	
R309	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R310	1-216-091-00	METAL GLAZE 56K 5% 1/10W	
R311	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R312	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R313	1-216-091-00	METAL GLAZE 56K 5% 1/10W	
R314	1-216-105-00	METAL GLAZE 220K 5% 1/10W	
R315	1-216-091-00	METAL GLAZE 56K 5% 1/10W	
R316	1-216-091-00	METAL GLAZE 56K 5% 1/10W	
R318	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R319	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R320	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R321	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R322	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R323	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R324	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R325	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R326	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R327	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R328	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R329	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R330	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R331	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R332	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R333	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R334	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R335	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R336	1-216-109-00	METAL GLAZE 330K 5% 1/10W	
R337	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R339	1-216-121-00	METAL GLAZE 1M 5% 1/10W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
R341	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R342	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R345	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R346	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R347	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R351	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R371	1-216-083-00	METAL GLAZE 27K 5% 1/10W	
R372	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R373	1-216-075-00	METAL GLAZE 12K 5% 1/10W	
R374	1-216-091-00	METAL GLAZE 56K 5% 1/10W	
R375	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R376	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R377	1-216-748-11	METAL GLAZE 39K 5% 1/10W	
R378	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R379	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R380	1-216-067-00	METAL GLAZE 5.6K 5% 1/10W	
R381	1-216-067-00	METAL GLAZE 5.6K 5% 1/10W	
R401	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R402	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R403	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R404	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R405	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R406	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R407	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R415	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R416	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R420	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R481	1-216-295-00	METAL GLAZE 0 5% 1/10W	
		VARIABLE RESISTOR	
RV101	1-230-521-11	RES, ADJ, METAL GLAZE 2.2K	
RV372	1-230-869-11	RES, ADJ, METAL GLAZE 4.7K	
		SWITCH	
S201	1-553-977-51	SWITCH, SLIDE (B.G/UK)	
S301	1-554-088-00	SWITCH, KEY BOARD (INDICATOR)	
		SAWF	
SWF101	1-404-323-00	SAWF (38.9MHZ)	
		COIL	
T101	1-404-848-11	COIL	
T102	1-404-848-11	COIL	
		TUNER	
TU101	1-465-136-11	TUNER PACK (EC-EE2585) AEP, UK, E MODEL	
	1-465-136-21	TUNER PACK (EC-EE2585G) WEST GERMANY MODEL	
		CRYSTAL	
X301	1-577-118-11	VIBRATOR, LITHIUM NIOBATE (4MHz)	
X302	1-527-997-21	VIBRATOR, CRYSTAL (32.768KHz)	

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Ref.No	Part No.	Description	Remark
	*A-7061-464-A	RG-5 BOARD, COMPLETE (Ref.No.1000 series) *********************	
	1-628-030-11	FP-132 FLEXIBLE BOARD	
	3-728-960-01	SOCKET, FLUORESCENCE TUBE	
		CAPACITOR	
C901	1-135-157-21	TANTAL. CHIP 10MF 10% 6.3V	
C902	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C903	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C904	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C908	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C912	1-164-004-11	CERAMIC CHIP 0.1MF 10% 25V	
C913	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C914	1-163-020-00	CERAMIC CHIP 0.0082MF 10% 50V	
C915	1-163-035-00	CERAMIC CHIP 0.047MF 50V	
C916	1-163-137-00	CERAMIC CHIP 680PF 10% 50V	
C917	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C918	1-163-009-11	CERAMIC CHIP 0.001MF 10% 50V	
C919	1-163-009-11	CERAMIC CHIP 0.001MF 10% 50V	
C920	1-163-115-00	CERAMIC CHIP 82PF 5% 50V	
C921	1-163-097-00	CERAMIC CHIP 15PF 5% 50V	
C922	1-135-091-00	TANTAL. CHIP 1MF 10% 16V	
C923	1-163-137-00	CERAMIC CHIP 680PF 5% 50V	
C924	1-135-091-00	TANTAL. CHIP 1MF 10% 16V	
C925	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
C926	1-163-103-00	CERAMIC CHIP 27PF 5% 50V	
C927	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C928	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C929	1-163-021-00	CERAMIC CHIP 0.01MF 50V	
C930	1-163-021-00	CERAMIC CHIP 0.01MF 50V	
C931	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C932	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C933	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C934	1-163-021-00	CERAMIC CHIP 0.01MF 50V	
C935	1-126-199-11	ELECT 6.8MF 20% 35V	
C936	1-163-021-00	CERAMIC CHIP 0.01MF 50V	
C937	1-135-157-21	TANTAL. CHIP 10MF 10% 6.3V	
C938	1-163-021-00	CERAMIC CHIP 0.01MF 50V	
C939	1-163-021-00	CERAMIC CHIP 0.01MF 50V	
C940	1-135-156-21	TANTAL. CHIP 6.8MF 20% 10V	
C942	1-163-021-00	CERAMIC CHIP 0.01MF 50V	
C943	1-126-199-11	ELECT 6.8MF 20% 35V	
C944	1-135-180-91	TANTAL. CHIP 3.3MF 20% 10V	
C945	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C946	1-163-115-00	CERAMIC CHIP 82PF 5% 50V	
C947	1-135-091-00	TANTAL. CHIP 1MF 10% 16V	
C948	1-163-133-00	CERAMIC CHIP 470PF 5% 50V	
C949	1-135-155-21	TANTAL. CHIP 4.7MF 20% 16V	
C950	1-163-125-00	CERAMIC CHIP 220PF 5% 50V	
C953	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C955	1-163-021-00	CERAMIC CHIP 0.01MF 50V	

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description	Remark
C956	1-163-021-00	CERAMIC CHIP 0.01MF	50V
C957	1-163-105-00	CERAMIC CHIP 33PF 5%	50V
C958	1-163-021-00	CERAMIC CHIP 0.01MF	50V
C959	1-163-105-00	CERAMIC CHIP 33PF 5%	50V
C960	1-163-105-00	CERAMIC CHIP 33PF 5%	50V
C961	1-163-101-00	CERAMIC CHIP 22PF 5%	50V
C962	1-163-109-00	CERAMIC CHIP 47PF 5%	50V
C963	1-163-109-00	CERAMIC CHIP 47PF 5%	50V
C964	1-163-109-00	CERAMIC CHIP 47PF 5%	50V
C965	1-126-206-11	ELECT 100MF 20%	6.3V
C966	1-126-203-21	ELECT 33MF 20%	25V
C967	1-126-204-11	ELECT 47MF 20%	16V
C969	1-163-021-00	CERAMIC CHIP 0.01MF	50V
C971	1-163-105-00	CERAMIC CHIP 33PF 5%	50V
C973	1-126-204-11	ELECT 47MF 20%	16V
C976	1-135-168-21	TANTAL. CHIP 100MF 20%	4V
C977	1-135-155-21	TANTAL. CHIP 4.7MF 20%	16V
C979	1-163-096-00	CERAMIC CHIP 13PF 5%	50V
C980	1-163-096-00	CERAMIC CHIP 13PF 5%	50V
C981	1-163-096-00	CERAMIC CHIP 13PF 5%	50V
C982	1-163-125-00	CERAMIC CHIP 220PF 5%	50V
C983	1-163-125-00	CERAMIC CHIP 220PF 5%	50V
C984	1-163-125-00	CERAMIC CHIP 220PF 5%	50V
C985	1-126-206-11	ELECT 100MF 20%	6.3V
C986	1-135-166-21	TANTAL. CHIP 47MF 20%	10V
C990	1-163-093-00	CERAMIC CHIP 10PF 5%	50V
		CONNECTOR	
CN901	*1-565-542-11	PIN, CONNECTOR (PC BOARD) 3P	
CN902	1-565-848-11	SOCKET, CONNECTOR 9P	
CN903	*1-565-543-11	PIN, CONNECTOR (PC BOARD) 4P	
CN905	1-566-532-11	CONNECTOR, FPC (ZIF) 16P	
CN906	1-565-846-11	PI, CONNECTOR (PC BOARD) 2P	
		TRIMMER	
CV901	1-141-347-11	CAP, VAR, TRIMMER (CHIP)	
CV902	1-141-311-11	CAP, VAR, TRIMMER (CHIP)	
		DIODE	
D901	8-719-106-22	DIODE RD7.5M-B1	
D902	8-719-106-22	DIODE RD7.5M-B1	
D903	8-719-100-05	DIODE 1S2837	
		DELAY LINE	
DL901	1-415-649-11	DELAY LINE, 1H (ULTRASONIC)	
		FILTER	
FL901	1-415-524-11	DELAY LINE (LOW PASS FILTER)	
FL902	1-235-437-11	BPF, PB C	
		IC	
IC901	8-759-631-76	IC M51403FP	
IC902	8-759-200-81	IC TC4053BF	

Ref.No	Part No.	Description	Remark
		COIL	
L901	1-408-782-11	INDUCTOR CHIP 27UH	
L902	1-410-393-11	INDUCTOR CHIP 100UH	
L903	1-410-373-21	INDUCTOR CHIP 2.2UH	
L904	1-410-393-11	INDUCTOR CHIP 100UH	
L905	1-410-373-21	INDUCTOR CHIP 2.2UH	
L908	1-410-381-11	INDUCTOR CHIP 10UH	
L909	1-410-381-11	INDUCTOR CHIP 10UH	
L910	1-410-381-11	INDUCTOR CHIP 10UH	
L911	1-410-381-11	INDUCTOR CHIP 10UH	
L912	1-408-789-21	INDUCTOR CHIP 100UH	
L913	1-408-789-21	INDUCTOR CHIP 100UH	
L914	1-408-789-21	INDUCTOR CHIP 100UH	
L915	1-410-389-11	INDUCTOR CHIP 47UH	
L916	1-410-389-11	INDUCTOR CHIP 47UH	
L917	1-410-389-11	INDUCTOR CHIP 47UH	
L918	1-410-381-11	INDUCTOR CHIP 10UH	
L925	1-408-782-11	INDUCTOR CHIP 27UH	
L930	1-410-383-11	INDUCTOR CHIP 15UH	
		TRANSISTOR	
Q901	8-729-903-10	TRANSISTOR FMW1	
Q902	8-729-100-76	TRANSISTOR 2SA812-M6	
Q903	8-729-920-59	TRANSISTOR IMX2	
Q904	8-729-903-82	TRANSISTOR FMW2	
Q905	8-729-904-44	TRANSISTOR FMY4	
Q906	8-729-100-66	TRANSISTOR 2SC1623	
Q907	8-729-100-76	TRANSISTOR 2SA812-M6	
Q908	8-729-100-76	TRANSISTOR 2SA812-M6	
Q909	8-729-100-76	TRANSISTOR 2SA812-M6	
Q910	8-729-904-41	TRANSISTOR FMY3	
Q911	8-729-904-41	TRANSISTOR FMY3	
Q912	8-729-904-41	TRANSISTOR FMY3	
Q913	8-729-920-59	TRANSISTOR IMX2	
Q914	8-729-100-66	TRANSISTOR 2SC1623	
Q915	8-729-920-59	TRANSISTOR IMX2	
Q916	8-729-100-66	TRANSISTOR 2SC1623	
Q917	8-729-920-59	TRANSISTOR IMX2	
Q918	8-729-100-66	TRANSISTOR 2SC1623	
Q919	8-729-904-41	TRANSISTOR FMY3	
Q920	8-729-904-44	TRANSISTOR FMY4	
Q921	8-729-904-41	TRANSISTOR FMY3	
Q922	8-729-904-44	TRANSISTOR FMY4	
Q923	8-729-904-41	TRANSISTOR FMY3	
Q924	8-729-904-44	TRANSISTOR FMY4	
Q925	8-729-904-41	TRANSISTOR FMY3	
Q926	8-729-904-44	TRANSISTOR FMY4	
Q927	8-729-907-46	TRANSISTOR IMZ1	
Q928	8-729-100-66	TRANSISTOR 2SC1623	
Q929	8-729-100-66	TRANSISTOR 2SC1623	
Q930	8-729-900-53	TRANSISTOR DTC114EK	
Q931	8-729-903-10	TRANSISTOR FMW1	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
Q936	8-729-903-10	TRANSISTOR FMW1				
Q938	8-729-100-66	TRANSISTOR 2SC1623				
Q939	8-729-100-76	TRANSISTOR 2SA812-M6				
Q940	8-729-900-53	TRANSISTOR DTC114EK				
		RESISTOR				
R850	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R851	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R852	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R868	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R869	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R870	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R871	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R872	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R890	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R891	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R892	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R893	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R894	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R895	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R896	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R897	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R898	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R899	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R901	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R902	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R903	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R904	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R905	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R906	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R907	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R908	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R909	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R910	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R911	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R912	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R913	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R914	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R915	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R917	1-216-104-00	METAL GLAZE	200K	5%	1/10W	
R918	1-216-090-00	METAL GLAZE	51K	5%	1/10W	
R919	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R920	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R921	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R922	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R923	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R924	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R925	1-216-125-00	METAL GLAZE	1.5M	5%	1/10W	
R926	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R927	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R928	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R929	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R930	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R932	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R933	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R936	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R937	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R938	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R939	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R940	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R941	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R942	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R943	1-216-091-00	METAL GLAZE	56K	5%	1/10W	
R944	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R945	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R946	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R947	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R948	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R949	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R950	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R951	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R952	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R953	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R954	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R955	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R956	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R957	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R958	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R959	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R960	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R961	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R962	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R963	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R964	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R965	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R966	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R967	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R968	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R969	1-216-677-11	METAL CHIP	12K	0.50%	1/10W	
R970	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R971	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R972	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R973	1-216-685-11	METAL CHIP	27K	0.50%	1/10W	
R974	1-216-693-11	METAL CHIP	56K	0.50%	1/10W	
R975	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R976	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R979	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R980	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R982	1-216-697-11	METAL CHIP	82K	0.50%	1/10W	
R983	1-216-657-11	METAL CHIP	1.8K	0.50%	1/10W	
R984	1-216-697-11	METAL CHIP	82K	0.50%	1/10W	
R985	1-216-657-11	METAL CHIP	1.8K	0.50%	1/10W	
R986	1-216-657-11	METAL CHIP	1.8K	0.50%	1/10W	
R987	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R988	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R989	1-216-748-11	METAL GLAZE	39K	5%	1/10W	

When indicating parts by reference number, please include the board name.

RG-5 KB-6 CA-15 LI-11 JK-34

Ref.No	Part No.	Description	Remark
R990	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R991	1-216-091-00	METAL GLAZE 56K 5% 1/10W	
R992	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R993	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R994	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R995	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R996	1-216-091-00	METAL GLAZE 56K 5% 1/10W	
R997	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R998	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R999	1-216-073-00	METAL GLAZE 10K 5% 1/10W	

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV901	1-230-874-11	RES, ADJ, METAL GLAZE 100K	
RV902	1-238-331-11	RES, VAR, CARBON 50K (COLOR)	
RV905	1-230-869-11	RES, ADJ, METAL GLAZE 4.7K	
RV906	1-230-867-11	RES, ADJ, METAL GLAZE 1K	
RV907	1-230-867-11	RES, ADJ, METAL GLAZE 1K	
RV908	1-230-868-11	RES, ADJ, METAL GLAZE 2.2K	
RV909	1-230-868-11	RES, ADJ, METAL GLAZE 2.2K	
RV912	1-230-874-11	RES, ADJ, METAL GLAZE 100K	
RV920	1-230-869-11	RES, ADJ, METAL GLAZE 4.7K	

SWITCH

Ref.No	Part No.	Description	Remark
S901	1-554-088-00	SWITCH, KEY BOARD (LCD ON/OFF)	

TRANSFORMER

Ref.No	Part No.	Description	Remark
T901	1-459-949-11	COIL	

TERMINAL PIN

Ref.No	Part No.	Description	Remark
TP901	*1-535-622-11	PIN, TERMINAL	
TP902	*1-535-622-11	PIN, TERMINAL	

CRYSTAL

Ref.No	Part No.	Description	Remark
X901	1-567-504-81	OSCILLATOR, CRYSTAL (4.43MHz)	

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*A-7070-680-A KB-6 BOARD, COMPLETE (Ref.No.3000 series)

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CONNECTOR

Ref.No	Part No.	Description	Remark
CN001	1-566-532-11	CONNECTOR, FPC (ZIF) 16P	

DIODE

Ref.No	Part No.	Description	Remark
D001	8-719-918-67	DIODE GL-1EG102 (POWER)	
D002	8-719-918-65	DIODE GL-1PR102 (REC)	
D003	8-719-920-80	DIODE GL-1HY102 (PAUSE)	
D004	8-719-404-40	DIODE MA121	
D005	8-719-404-40	DIODE MA121	
D006	8-719-100-05	DIODE 1SS193	

RESISTOR

Ref.No	Part No.	Description	Remark
R001	1-216-037-00	METAL GLAZE 330 5% 1/10W	
R002	1-216-045-00	METAL GLAZE 680 5% 1/10W	
R003	1-216-037-00	METAL GLAZE 330 5% 1/10W	
R005	1-216-295-00	METAL GLAZE 0 5% 1/10W	

SWITCH

Ref.No	Part No.	Description	Remark
S002	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (CHANNEL -)	
S003	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (CHANNEL +)	
S004	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (▮▮ PAUSE)	
S005	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (◀◀ REW)	
S006	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (▶▶ FF)	
S007	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (▶ PB)	
S008	1-571-102-11	SWITCH, SLIDE (EJECT)	
S009	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (■ STOP)	
S010	1-571-102-21	SWITCH, SLIDE (● REC)	
S011	1-571-102-11	SWITCH, SLIDE (POWER)	

FLEXIBLE BOARD

Ref.No	Part No.	Description	Remark
W001	1-628-031-11	FP-131 FLEXIBLE BOARD	

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*1-627-994-12 CA-15 BOARD (Ref.No.3000 series)

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CONNECTOR

Ref.No	Part No.	Description	Remark
CN601	*1-566-185-11	PIN, CONNECTOR (PC BOARD) 6P	
CN602	1-506-482-11	PIN, CONNECTOR 3P	
CN603	1-562-952-11	CONNECTOR 12P	

DIODE

Ref.No	Part No.	Description	Remark
D601	8-719-106-43	DIODE RD9.1M-B1	
D602	8-719-106-43	DIODE RD9.1M-B1	
D603	8-719-106-43	DIODE RD9.1M-B1	
D604	8-719-106-43	DIODE RD9.1M-B1	
D605	8-719-107-13	DIODE RD18M-B1	
D606	8-719-106-43	DIODE RD9.1M-B1	
D607	8-719-106-43	DIODE RD9.1M-B1	

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*1-627-989-13 LI-11 BOARD

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Ref.No	Part No.	Description	Remark
	1-550-414-11	HOLDER, BATTERY	

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*1-627-995-13 JK-34 BOARD (Ref.No.3000 series)

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CAPACITOR

Ref.No	Part No.	Description	Remark
C701	1-163-035-00	CERAMIC CHIP 0.047MF 50V	

When indicating parts by reference number, please include the board name.

CONNECTOR

Ref.No	Part No.	Description	Remark
CN701	*1-566-199-11	PIN, CONNECTOR (PC BOARD) 6P	
CN702	*1-566-197-11	PIN, CONNECTOR (PC BOARD) 4P	

DIODE

Ref.No	Part No.	Description	Remark
D701	8-719-106-43	DIODE RD9.1M-T1B1	
D702	8-719-106-43	DIODE RD9.1M-T1B1	
D703	8-719-106-43	DIODE RD9.1M-T1B1	
D704	8-719-106-43	DIODE RD9.1M-T1B1	

JACK

Ref.No	Part No.	Description	Remark
J701	1-565-768-11	JACK, PIN 2P	
J702	1-537-179-11	TERMINAL BOARD	

COIL

Ref.No	Part No.	Description	Remark
L701	1-408-795-21	INDUCTOR CHIP 330UH	

RESISTOR

Ref.No	Part No.	Description	Remark
R701	1-216-015-00	METAL GLAZE 39 5% 1/10W	
R702	1-216-015-00	METAL GLAZE 39 5% 1/10W	

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*1-627-997-11 UC-1 BOARD (Ref.No.3000 series)
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1-628-033-11 FP-129 FLEXIBLE BOARD

CONNECTOR

Ref.No	Part No.	Description	Remark
CN001	1-566-529-11	CONNECTOR, FPC (ZIF) 13P	
CN002	1-566-527-11	CONNECTOR, FPC (ZIF) 11P	

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*A-7070-811-A KB-7 BOARD, COMPLETE (Ref.No.3000 series)
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CAPACITOR

Ref.No	Part No.	Description	Remark
C301	1-163-038-00	CERAMIC CHIP 0.1MF 25V	

DIODE

Ref.No	Part No.	Description	Remark
D301	8-719-812-31	DIODE TLR123	

RESISTOR

Ref.No	Part No.	Description	Remark
R301	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W	
R302	1-216-101-00	METAL GLAZE 150K 5% 1/10W	
R303	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R304	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R306	1-216-049-00	METAL GLAZE 1K 5% 1/10W	

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV301	1-238-282-11	RES, VAR, CARBON 10K (◢ VOLUME)	
RV302	1-238-281-11	RES, VAR, CARBON 2K (BRIGHT)	

SWITCH

Ref.No	Part No.	Description	Remark
S301	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (CUNTER RESET)	
S302	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (DATA SCREEN ON/OFF)	

FLEXIBLE BOARD

Ref.No	Part No.	Description	Remark
W301	1-628-032-11	FP-130 FLEXIBLE BOARD	

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*1-628-034-11 FP-142 FLEXIBLE BOARD
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1-562-880-11 CONNECTOR, CARD EDGE 15P

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MISCELLANEOUS
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Ref.No	Part No.	Description	Remark
	1-466-009-11	SWITCH BLOCK, CONTROL	
	⚠1-466-011-11	CONVERTER UNIT, D/A	
	1-501-415-11	ANTENNA, TELESCOPIC	
	⚠1-528-174-31	BATTERY, LITHIUM (CR2032 TYPE)	
	1-808-505-12	SENSOR (DEW)	
	1-808-658-11	DISPLAY MODULE, LIQUID CRYSTAL	
C901	1-162-853-91	CERAMIC 0.001MF 20% 16V	
BL001	1-518-638-11	TUBE, FLUORECENT	
BL002	1-518-638-11	TUBE, FLUORECENT	
M902	8-835-331-01	MOTOR, DC U-22A (CAPSTAN)	
M903	A-7040-160-A	MOTOR ASSY, THREADING (LOADING)	
S901	1-571-099-11	SWITCH (CASSETTE, DOWN)	
SP901	1-503-293-00	SPEAKER	

****

ACCESSORIES AND PACKING MATERIALS
****

Part No.	Description	Remark
1-528-174-31	BATTERY, LITHIUM (CR2032 TYPE)	
2-366-919-00	BAG, PROTECTION	
*3-728-884-01	CUSHION (UPPER)	
*3-728-885-01	CUSHION (LOWER)	
3-728-996-01	CASE, SOFT	
*3-764-869-11	INSTRUCTION, DBP CAUTION **WEST GERMANY MODEL**	
3-786-473-11	MANUAL, INSTRUCTION (ENGLISH) **AEP, UK, E MODEL**	
3-786-473-41	MANUAL, INSTRUCTION (FRENCH, GERMANY, SPANISH) **AEP, WEST GERMANY, E MODEL**	
3-786-473-51	MANUAL, INSTRUCTION (DUTCH, SWEDISH, ITALIAN) AEP MODEL	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

ACCESSORIES AND PACKING MATERIALS (KIT)

Ref.No	Part No.	Description	Remark
	*3-728-886-01	CUSHION (UPPER), ACC	
	*3-728-887-01	CUSHION (LOWER), ACC	
	*3-728-890-11	SLEEVE, ACC KIT	
	*3-728-891-11	INDIVIDUAL CARTON AEP, UK, E MODEL	
	*3-728-891-21	INDIVIDUAL CARTON WEST GERMANY MODEL	
	8-952-266-88	HEADPHONE MDR-A10L/VB SET	
	** AC-V30	AC POWER ADAPTOR	
	*** NP-55	RECHARGABLE BATTERY	

** MARK PART IS AVAILABLE FOR REPAIR SERVICE.
*** MARK PART IS AVAILABLE.

****

HARDWARE LIST

****

STOP RING

Part No.	Description
7-624-104-04	STOP RING 2.0, TYPE -E
7-624-133-04	STOP RING 3, TYPE-CE

SCREW

Part No.	Description
7-621-255-25	SCREW +BVTT 2X4 (S)
7-627-555-88	SCREW, PRECISION +P 1.4X1.8
7-627-852-08	SCREW, PRECISION +P 1.7X2.5
7-627-553-37	PRECISION SCREW +P 2X3 TYPE 3
7-627-553-47	PRECISION SCREW +P 2X4 TYPE 3
7-627-854-08	PRECISION SCREW +P 2X2.5 TYPE 3

****

When indicating parts by reference number, please include the board name.

SECTION 7
MECHANICAL ADJUSTMENTS

FOR MECHANICAL ADJUSTMENTS

Refer to mechanical adjustment manual " U MECHANISM" for the adjustments and checks of mechanism section and the mechanical parts replacement.

SECTION 8
ELECTRICAL ADJUSTMENT

Refer to the adjustment-related parts location diagram on page 172.

The following measuring devices are used for electrical adjustment.

[Required equipment]

1) TV Monitor
2) Dual-trace oscilloscope with delay mode for frequencies up to 10 MHz or over (use a 10 : 1 probe unless otherwise specified)
3) Frequency counter
4) Pattern generator with video output terminal
5) Digital voltmeter
6) Audio generator
7) Audio level meter
8) Audio distortion meter
9) Audio attenuator
10) Regulated power supply
11) Alignment tapes
    For tracking adjustment (WR5-1C)
        Part code : 8-967-995-06
    For video frequency characteristic adjustment
        (WR5-6C)*1
        Part code : 8-967-995-17
    For operation check
        (WR5-4CL)*2
        Part code : 8-967-995-56
        (WR5-5CSP)*3
        Part code : 8-967-995-47

*1 : WR5-2C (8-967-995-16) is also available.
*2 : WR5-3CL (8-967-995-36) is also available.
*3 : WR5-3CSP (8-967-995-27) and WR5-4CSP (8-967-995-46) are also available.

[Connections]

Connect measuring devices as shown below unless otherwise specified.

- INPUT SELECT switch ...... LINE position

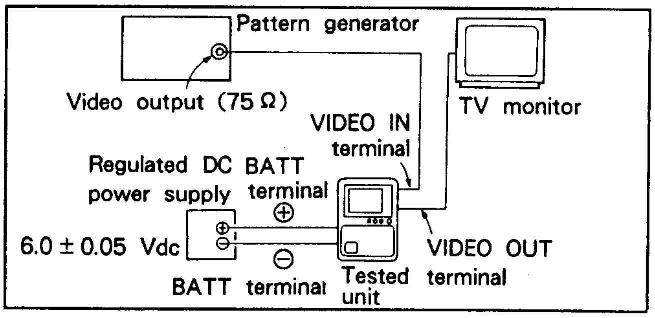

Pattern generator
Video output (75 Ω)
VIDEO IN terminal
TV monitor
Regulated DC power supply
BATT terminal
⊕
6.0 ± 0.05 Vdc
⊖
BATT terminal
Tested unit
VIDEO OUT terminal

Fig. 8-1.

[Setup for adjustment]

The video signal from the pattern generator is used as adjustment signal, so it must be within specifications. Connect the oscilloscope to J701 on the JK-34 board (VIDEO IN) and confirm that amplitude of the video signal sync component is approx. 0.3V, amplitude of the video component approx. 0.7V, and amplitude of the burst component approx. 0.3V with a flat shape. Also confirm that the ratio between burst and red levels is 0.30 : 0.66.

The video (color bar) signal used for electrical adjustment is shown in Fig. 8-2.

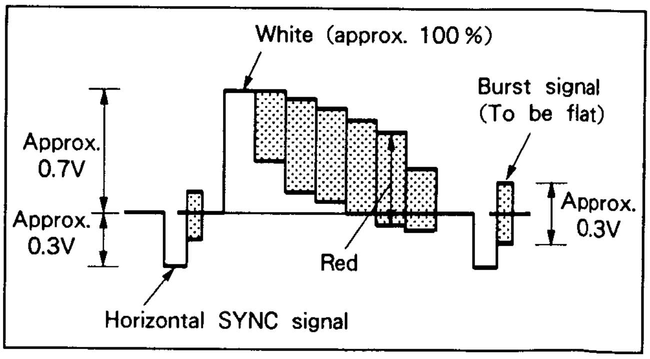
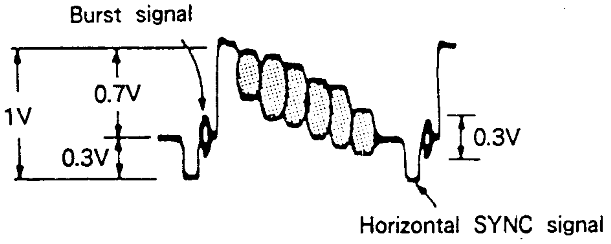
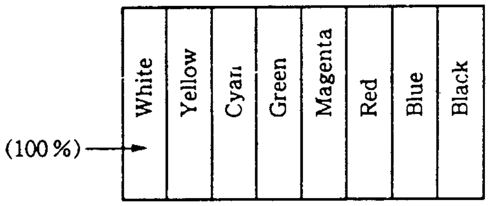

White (approx. 100%)
Burst signal (To be flat)
Approx. 0.7V
Approx. 0.3V
Approx. 0.3V
Red
Horizontal SYNC signal

Fig. 8-2.

[Alignment tapes]

Tape	Content	Use
Tracking (WR5-1C)	1. Recording area : PCM – video 2. Recording content : CH2 : 1MHz linearity adjustment signal	Drum linearity adjustment
Video Frequency Response (WR5-6C)	1. Recording area : Video 2. Recording content : RF sweep 0 to 10MHz 3. Maker : 1, 3.58, 5.5 and 7MHz	Frequency response adjustment
Operation Check SP mode (WR5-5CSP) LP mode (WR5-4CL) Note : PCM area is not included in WR5-4CL	1. Recording area : Video 2. Recording content : ■ Video track • Video signals Color bars 4min Monoscope 4min (Color bars)  Burst signal 1V 0.7V 0.3V 0.3V Horizontal SYNC signal  White Yellow Cyan Green Magenta Red Blue Black (100%) • Audio signals (AFM) 400Hz 60% modulation ■ PCM area (WR5-5CSP only) • Audio signals (PCM) 1kHz 4min Color bar section 20Hz 20sec 400Hz 20sec Monoscope section 14kHz 20sec	Operation check

[Input/output level and impedance]

Video input	Pin jack Input signal : 1 Vp-p, 75 Ω unbalanced, negative sync
Video output	Pin jack Output signal : 1 Vp-p, 75 Ω unbalanced, negative sync
Audio input	Pin jack Input level: –10 dBs (0 dBs = 0.775 Vrms) Input impedance : 47 kΩ or over
Audio output	Pin jack Specified output : – 10 dBs Output impedance : 2.2 kΩ or less

8-1. POWER BLOCK ADJUSTMENT AND CHECK

8-1-1. Unregulated Power Supply Voltage Check (PS-181 Board)

Mode	Power off
Measuring Instrument	Digital voltmeter
MT UNREG B	
Measurment Point	Pin ⑬ of CN101
Specified Value	6.0 ± 0.1 Vdc
MT UNREG A	
Measurement Point	Pin ⑫ of CN101
Specified Value	6.0 ± 0.1 Vdc
SV UNREG	
Measurement Point	Pin ⑩ of CN101
Specified Value	5.9 ± 0.1 Vdc
AU UNREG	
Measurement Point	Pin ⑨ of CN101
Specified Value	5.9 ± 0.1 Vdc
BL UNREG	
Measurement Point	Pin ③ of CN102
Specified Value	5.8 ± 0.1 Vdc

Adjusting method :

1) Adjust the stabilized power supply output voltage so that voltage between Pin ② (BATT 6V) and Pin ① of CN103 becomes 6.0 ± 0.05 Vdc.
2) Confirm that voltage at every check point meets the specifications.

8-1-2. Oscillation Frequency Adjustment (PS-181 Board)

Mode	Stop (power on)
Measurement Point	Collector of Q106
Measuring Instrument	Frequency counter
Adjusting Element	RV101
Specified Value	475 ± 5 kHz

Adjusting method :

1) Adjust oscillation frequency to 475 ± 5 kHz with RV101.

8-1-3. Switch 5V Adjustment (PS-181 Board)

Mode	Stop (power on)
Measurement Point	Pin ⑦ of CN101
Measuring Instrument	Digital voltmeter
Adjusting Element	RV102
Specified Value	4.95 ± 0.05 Vdc

Adjusting method :

1) Adjust to 4.95 ± 0.05 Vdc with RV102.

8-1-4. − 8V Adjustment (PS-181 Board)

Mode	Stop (power on)
Measurement Point	Pin ⑩ of CN102
Measuring Instrument	Digital voltmeter
Adjusting Element	RV103
Specified Value	− 8.3 ± 0.1 Vdc

Adjusting method :

1) Adjust to − 8.3 ± 0.1 Vdc with RV103.

8-1-5. TV Power Voltage Check (PS-181 Board)

Mode	Stop (power on)
Measuring Instrument	Digital voltmeter
TV 5V	
Measurment Point	Pin ⑤ of CN102
Specified Value	4.95 ± 0.05 Vdc
+ 13V	
Measurement Point	Pin ⑧ of CN102
Specified Value	13.0 ± 0.5 Vdc
− 20V	
Measurement Point	Pin ⑪ of CN102
Specified Value	− 20.0 ± 0.5 Vdc
+ 30 Vdc	
Measurement Point	Pin ⑫ of CN102
Specified Value	33.0 ± 2.0 Vdc

Checking method :

1) Confirm that voltage at every check point meets the specifications.

8-1-6. Video 5V Check (PS-181 Board)

Mode	Recording or playback
Measurement Point	Arbitrary
Measuring Instrument	Pin ⑥ of CN101
Adjusting Element	Digital voltmeter
Specified Value	4.85 ± 0.1 Vdc

Checking method :

1) Confirm that voltage at Pin ⑥ of CN101 meets the specifications.

8-1-7. CAM UNREG Check (PS-181 Board)

Mode	Camera standby
Measurement Point	Pin ② of W104
Measuring Element	Digital voltmeter
Specified Value	5.8 ± 0.1 Vdc

Checking method :

1) Turn power on and set the INPUT SELECT switch (S101 on the SV-35 board) to the CAMERA position.
2) Confirm that voltage at Pin ② of W104 meets the specifications.

8-2. SYSTEM CONTROL ADJUSTMENT

8-2-1. Battery Down Adjustment (SV-35 Board)

Mode	Stop (power on)
Signal	Arbitrary
Measurement Point	Check the LCD counter display
Measuring Instrument	
Adjusting Element	RV101
Specified Value	2 : 89 to 2 : 87 reading on the LCD counter display

Connections :

1) Connect the stabilized power supply and the voltmeter as shown in Fig. 8-3.
2) Connect Pin ① (TEST B) and Pin ② (COM) of CN017 with a jumper wire (TEST 2 MODE).

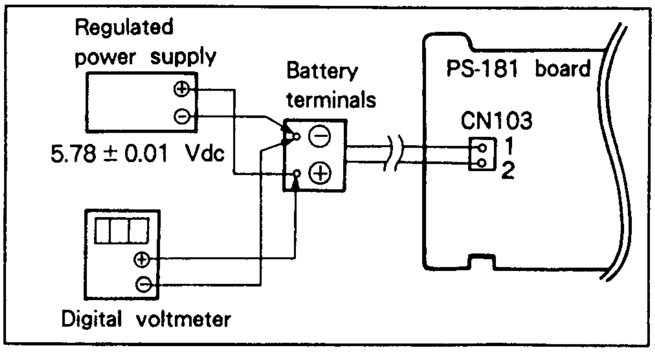


Fig. 8-3.

Adjusting method :

1) Press the LCD block DATA SCREEN button (S302 on the KB-7 board). The counter will be displayed on the LCD (Confirm that it reads "– 1 : 03 : 00").
2) Short-circuit TP001 and TP002 on the KB-6 board once and confirm that the "–" on the display blinks (Fig. 8-4 Ⓐ).
3) Adjust the stabilized power supply output voltage so that the digital voltmeter reading becomes 5.78 ± 0.01 Vdc.
4) Adjust RV101 so that the LCD counter reading is within "– 1 : 02 : 89" and "– 1 : 02 : 87" (Fig. 8-4 Ⓑ).
5) Remove the jumper wire between Pins ① and ② of CN017 and short-circuit TP001 and TP002 on the KB-6 board four times to set the LCD counter reading to "0 : 00 : 00" (TEST mode cancelled).

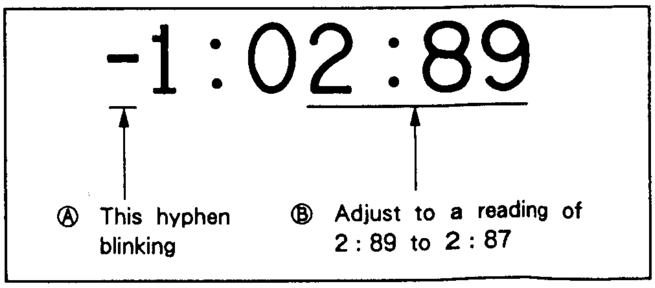


Fig. 8-4.

Checking method :
Check as follows, and repeat adjustment if specifications are not satisfied.

1) Adjust the stabilized power supply output voltage so that the digital voltmeter display reads 6.00 ± 0.01 Vdc.
2) Confirm that the "BATTERY DOWN" indication is not displayed on the LCD and that the POWER LED is not blinking.
3) Slowly lower the stabilized power supply output voltage until the digital voltmeter display reads 5.78 ± 0.01 Vdc.
4) Confirm that the "BATTERY DOWN" indication is displayed on the LCD and that the POWER LED blinks at 1-s intervals.
5) Lower the stabilized power supply output voltage until the digital voltmeter display reads 5.70 ± 0.01 Vdc.
6) Confirm that the screen disappears and power goes off.

8-3. SERVO SYSTEM ADJUSTMENT

8-3-1. Oscillation Frequency Adjustment (SV-35 Board)

Mode	Stop (power on)
Signal	Arbitrary
Measurement Point	Pin ① of IC305
Measuring Instrument	Frequency counter
Adjusting Element	RV301
Specified Value	479.8 ± 5 kHz

Adjusting method :

1) Adjust oscillation frequency to 479.8 ± 5 kHz with RV301.

8-3-2. Switching Position Adjustment (SV-35 Board)

Mode	Playback
Signal	Alignment tape for operation check (WR5-5CSP)
Measurement Point	CH-1 : Pin ④ of W013 (VIDEO OUT) CH-2 : Pin ④ of CN018 (RF SWP)
Measuring Instrument	Oscilloscope
Adjusting Element	RV102
Specified Value	6.5 ± 0.3 H (410 ± 20 μs)

Adjusting method :

1) Connect Pins ③ (TEST A) and ② (COM) of CN017 with a jumper wire (TEST 1 MODE).
2) Adjust to 6.5 ± 0.3H (410 ± 20 μs) with RV102.

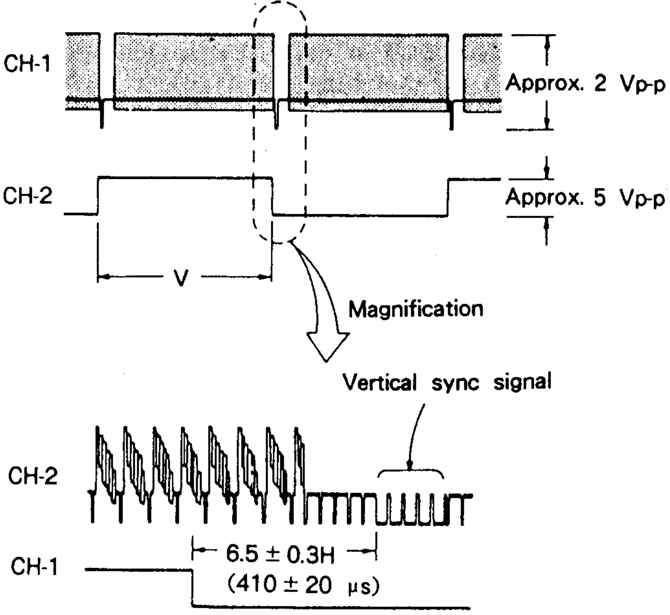


Fig. 8-5. Switching position adjustment

8-3-3. Capstan FG Adjustment (SV-35 Board)

Mode	Recording (LP mode)
Signal	Arbitrary
Measurement Point	Pin ⑦ of IC303
Measuring Instrument	Oscilloscope
Adjusting Element	RV302
Specified Value	Minimum amplitude

Adjusting method :

1) Adjust amplitude of the output waveform (capstan error) at Pin ⑦ of IC303 to the minimum with RV302.

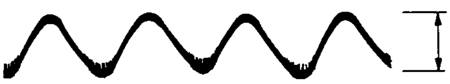


Fig. 8-6.

8-3-4. Still Playback Adjustment (SV-35 Board)

Items between square brackets [ ] indicate the adjusting element for LP mode.

Mode	Playback pause
Signal	Tape self-recorded color bar signal in SP [LP] mode.
Measurement Point	TV monitor screen
Measuring Instrument	
Adjusting Element	RV103 [RV104]
Specified Value	SP mode : Noise on upper and lower areas covering 1/3 of the screen or less. LP mode : Noise on upper and lower areas covering 1/4 of the screen or less.

Adjusting method :

1) Connect Pins ① (TEST B) and ② (COM) of CN107 with a jumper wire (TEST 2 MODE).
2) Play back the tape recorded by the tested unit, wait until the picture is stabilized and press the PAUSE button, setting the playback pause mode.
3) Confirm that noise is confined to upper and lower areas covering 1/3 [1/4] or the screen or less.
4) If the above specification is not satisfied, repeat steps 2) and 3).

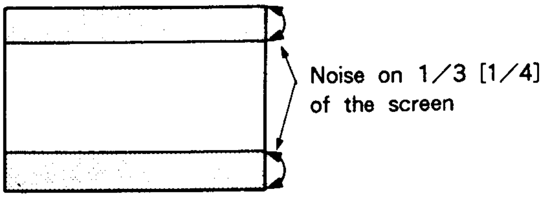


Fig. 8-7. STILL adjustment

8-3-5. Playback SP/LP Adjustment (SV-35 Board)

Mode	Various playback (CUE)
Signal	Alignment tape for operation check (SP mode : WR5-5CSP) (LP mode : WR5-4CL)
Measurement Point	TP202
Measuring Instrument	Digital voltmeter
Adjusting Element	RV201
Specified Value	$\frac{V_S + V_L}{2}$

Adjusting method :

1) Connect Pins ③ (TEST A) and ② (COM) of CN017 with a jumper wire (TEST 1 MODE).
2) Set S602 (SP/LP) to the LP position, then play back the SP mode tape (WR5-5CSP) in CUE mode.
3) Measure the present voltage (V_S) at Pin ② (TP201) of IC201 with a digital voltmeter and record it. (V_S)
4) Set S602 (SP/LP) to the SP position, then play back the LP mode tape (WR5-4CL) in CUE mode.
5) Measure the present voltage (V_L) at Pin ② (TP201) of IC201 with a digital voltmeter and record it. (V_L)
6) Adjust voltage at TP202 to $\frac{(V_S + V_L)}{2}$ with RV201.
7) Remove the jumper wire attached in step 1).

8-4. VIDEO ADJUSTMENT

As a rule, follow the order below for adjustment of the video system.
The color video signal supplied by the pattern generator is used as input video signal for video system adjustment in the recording mode. Confirm that the sync and color burst components meet the specifications in Fig. 8-2 of the "Setup for Adjustment" section.

[Adjustment order]

1) Playback frequency characteristic adjustment
2) Flying erase check
3) Crystal oscillator fo adjustment
4) Y/C separation adjustment
5) IR 2 adjustment
6) Emphasis input level adjustment
7) Sync AGC adjustment
8) PB Y level 1 adjustment
9) PB Y level 2 adjustment
10) Y FM carrier frequency adjustment
11) Y FM deviation adjustment
12) AC clip check
13) Chroma emphasis fo adjustment
14) REC Y recording current adjustment
15) REC C recording current adjustment
16) REC AFM recording current adjustment
17) REC AFT recording current adjustment
18) Delay chroma gain adjustment
19) Quasi burst phase adjustment
20) Delay burst phase adjustment

8-4-1. Playback Frequency Characteristic Adjustment (SV-35 Board)

1. CH-1 and CH-2 adjustments

Items between square brackets [ ] indicate the adjusting element for channel 2.

Mode	Playback
Signal	Alignment tape for frequency characteristic adjustment (WR5-2C)
Measurement Point	Pin ③ of CN018 External trigger : Pin ④ of CN018 Trigger slope : +, [−]
Measuring Instrument	Oscilloscope
Adjusting Element	RV501 (RV502)
Specified Value	3.58 MHz level : 5.5 MHz level = 4 : 2.5

Adjusting method :

1) Adjust the ratio between 3.58 and 5.5 MHz levels to 4 : 2.5 [4 : 2.5] with RV501 [RV502].

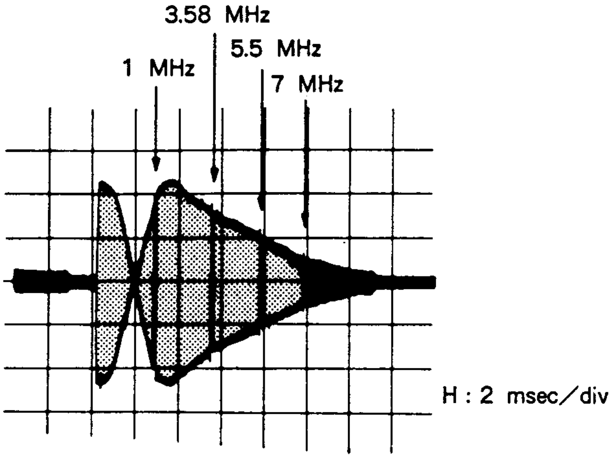


Fig. 8-8. Playback frequency characteristic adjustment

8-4-2. Flying Erase Check (SV-35 Board)

Mode	Recording
Signal	Arbitrary
Measurement Point	Pin ① of CN015 (FE (X))
Measuring Instrument	Oscilloscope and frequency counter
Specified Value	Frequency : 8.0 ± 0.5 MHz

Note : Use an MP type tape (level at Pin ⑮ of CN006 must be low).

Checking method :

1) Confirm that oscillation frequency is 8.0 ± 0.5 MHz and oscillation voltage is 8.0 Vp-p or more.

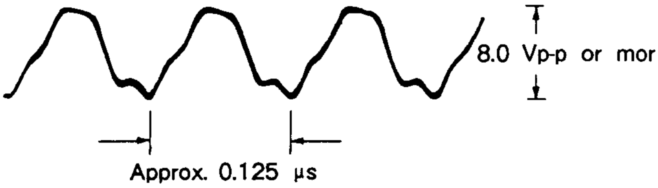


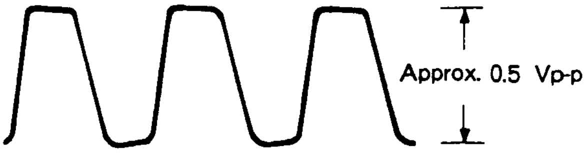
Fig. 8-9.

8-4-3. Crystal Oscillator fo Check (SV-35 Board)

Mode	Playback
Signal	Alignment tape for operation check (WR5-3CSP)
Measurement Point	Emitter of Q614
Measuring Instrument	Frequency counter
Specified Value	4433619 ± 50 Hz

Adjusting method :

1) Confirm that oscillation frequency at Emitter of Q614 is 4433619 ± 50 Hz.



(4433619 ± 50 MHz)

Fig. 8-10. Crystal oscillator fo check

8-4-4. Sync AGC Adjustment (SV-35 Board)

Mode	Recording
Signal	Color bar
Measurement Point	Pin ㊾ of IC600
Measuring Instrument	Oscilloscope
Adjusting Element	RV701
Specified Value	0.50 ± 0.02 Vp-p

Adjusting method :
1) Adjust to 0.50 ± 0.02 Vp-p with RV701.

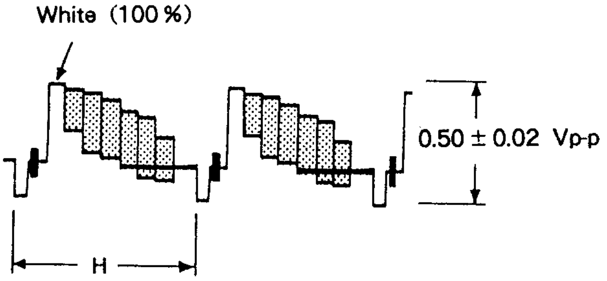

White (100%)
0.50 ± 0.02 Vp-p
H

Fig. 8-11. Sync AGC adjustment

8-4-5. Y/C Separation Adjustment (SV-35 Board)

Mode	Recording
Signal	Color bar
Measurement Point	Pin ㉕ of IC600
Measuring Instrument	Oscilloscope
Adjusting Element	RV600
Specified Value	Minimum residual chroma component

Connection :
1) Connect Pin ㊴ of IC600 (Pin ⑦ of the CCD delay block) to GND with a 10 μF/16V electrolytic capacitor (The negative side of the capacitor is GND).

Adjusting method :
1) Adjust RV600 so as to minimize the residual chroma component.

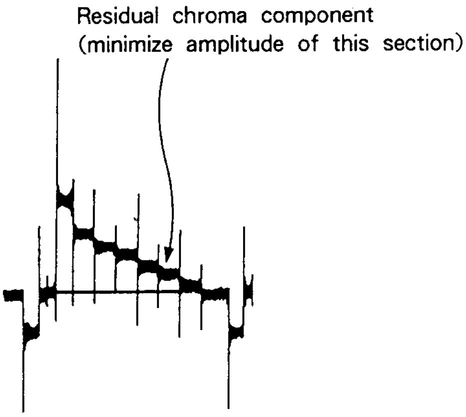

Residual chroma component
(minimize amplitude of this section)

Fig. 8-12. Y/C separation adjustment

8-4-6. IR 2 Adjustment (SV-35 Board)

Mode	Recording
Signal	Color bar
Measurement Point	CH-1 : Pin ⑤ of IC600 (TP601 : REC C RF OUT) CH-2 : Pin ⑧ of IC600 (BF OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	RV601
Specified Value	a = b (see Fig. 4-13)

Connection :
1) Connect a 1 kΩ resistor between Pin ⑧ of IC600 and GND.

Adjusting method :
1) Adjust RV601 so as to align the falling edge (┐_) of CH-2 burst pulse with the middle point of CH-1 burst signal (see Fig. 8-13).

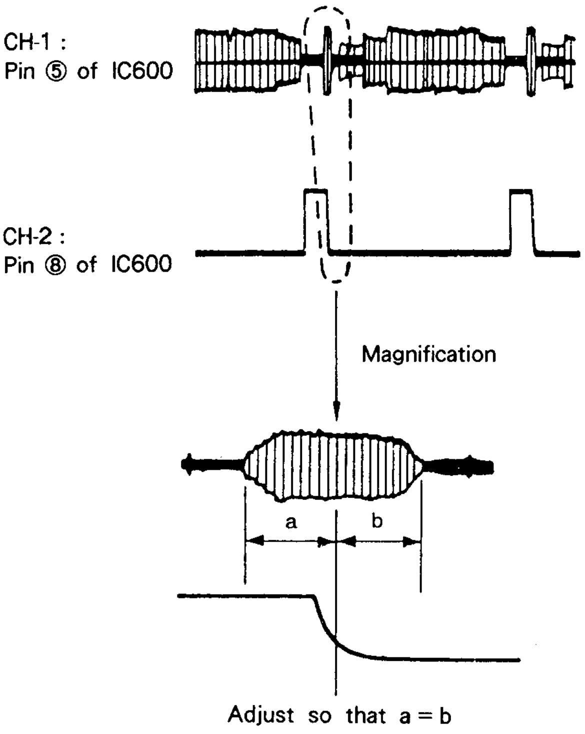

CH-1 :
Pin ⑤ of IC600
CH-2 :
Pin ⑧ of IC600
Magnification
a
b
Adjust so that a = b

Fig. 8-13. IR 2 adjustment

8-4-7. Emphasis Input Level Adjustment (SV-35 Board)

Mode	Recording
Signal	Color bar
Measurement Point	Pin (54) of IC600
Measuring Instrument	Oscilloscope
Adjusting Element	RV603
Specified Value	0.50 ± 0.02 Vp-p

Adjusting method :

1) Adjust to 0.50 ± 0.02 Vp-p with RV603.

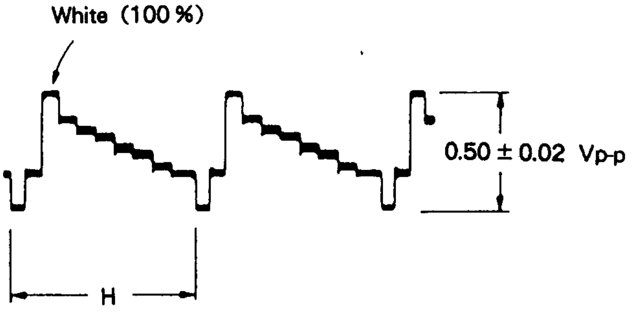


Fig. 8-14. Emphasis input level adjustment

8-4-8. PB Y Level 1 Adjustment (SV-35 Board)

Mode	Playback
Signal	Alignment tape for operation check (WR5-3CSP) Color bar section
Measurement Point	Pin ㊼ of IC600 (Pin ⑤ of the CCD delay block)
Measuring Instrument	Oscilloscope
Adjusting Element	RV606
Specified Value	0.50 ± 0.02 Vp-p

Adjusting method :

1) Adjust to 0.50 ± 0.02 Vp-p with RV606.
2) Always perform "PB Y level 2 adjustment (8-4-9.)" after this adjustment.

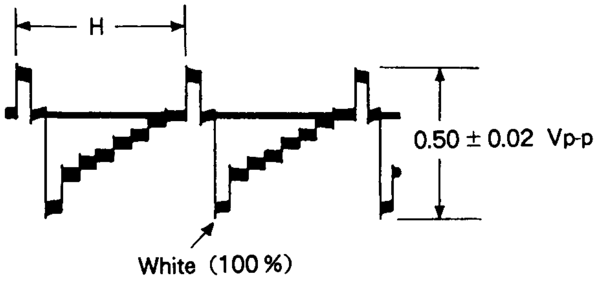


Fig. 8-15. PB Y level 1 adjustment

8-4-9. PB Y Level 2 Adjustment (SV-35 Board)

Mode	Playback
Signal	Alignment tape for operation check (WR5-3CSP) Color-bar section
Measurement Point	Pin ④ of W013(VIDEO OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	RV602
Specified Value	1.00 ± 0.05 Vp-p

Notes : 1) The VIDEO OUT terminal (J702 on the JK-34 board) must be terminated in 75 Ω.
2) Perform "PB Y level 1 adjustment (8-4-8)" first.

Adjusting method :

1) Adjust to 1.00 ± 0.05 Vp-p with RV602.

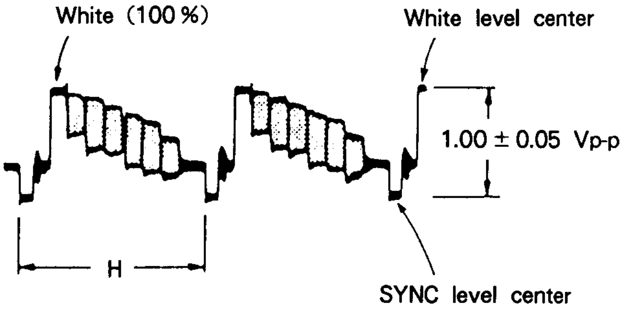


Fig. 8-16. PB Y level 2 adjustment

8-4-10. Y FM Carrier Frequency Adjustment (SV-35 Board)

Mode	Recording
Signal	Non-signal
Measurement Point	Pin (59) of IC600
Measuring Instrument	Frequency counter
Adjusting Element	RV605
Specified Value	4.39 ± 0.02 MHz

Adjusting method :

1) Adjust to 4.39 ± 0.02 MHz with RV605.
2) Perform "deviation adjustment".

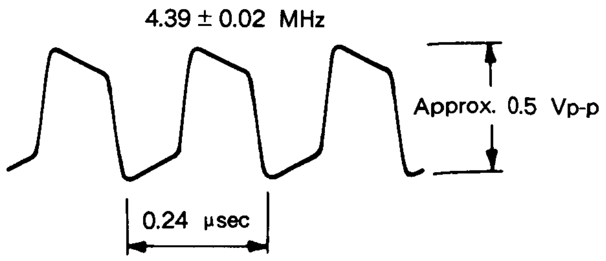


Fig. 8-17. Y FM carrier frequency adjustment

8-4-11. Y FM Deviation Adjustment (SV-35 Board)

Mode	Recording and playback
Signal	Color bar
Measurement Point	Pin ④ of W013(VIDEO OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	RV604
Specified Value	Playback level 1.00±0.05 Vp-p

Notes : 1) Perform "PB Y level 1 adjustment (8-4-8)", "PB Y level 2 adjustment (8-4-9)" and "Y FM Carrier Frequency Adjustment (8-4-10)" first.

2) The VIDEO OUT terminal (J702 on the JK-34 board) must be terminated in 75 Ω.

Adjusting method :

1) Record the color bar signal.
2) Play back the recorded signal.
3) Confirm the playback output level.
   Specification : 1.00 ± 0.05 Vp-p
4) If the specification is not satisfied, rotate RV604 as follows, then repeat steps 1) to 3).

	RV604 rotating direction
When larger than the specified value	Clockwise (○)
When smaller than the specified value	Counterclockwise (○)

Table 8-1.

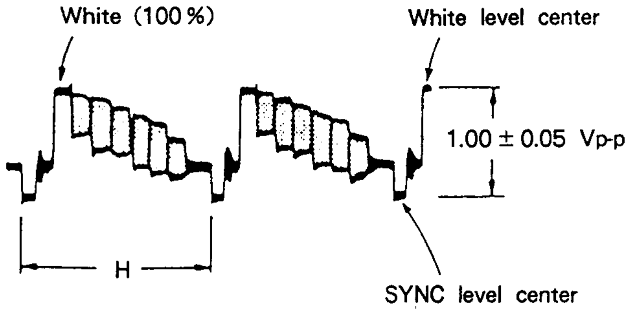


Fig. 8-18. Y FM deviation adjustment

8-4-12. AC Clip Check (SV-35 Board)

Mode	Recording
Signal	Color bar
Measurement Point	Pin ㉕ of IC600
Measuring Element	Oscilloscope
Specified Value	240 ± 10 %

Adjsuting method :

1) Confirm that the white (100 %) peak of the waveform output from Pin ㉕ of IC600 is 240 ± 10 %.

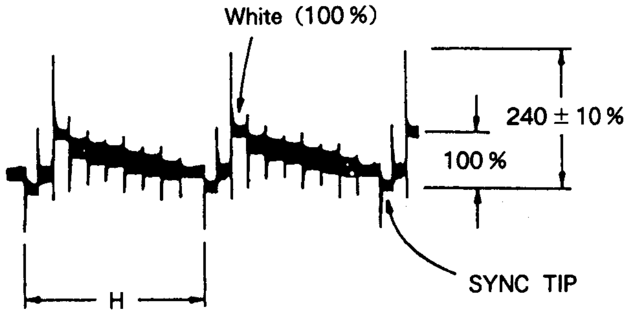


Fig. 8-19. AC clip check

8-4-13. Chroma Emphasis fo Adjustment (SV-35 Board)

Mode	Recording
Signal	Color bar
Measurement Point	Pin ⑤ of IC600
Measuring Instrument	Oscilloscope
Adjusting Element	FL601
Specified Value	Minimum fo component

Adjusting method :

1) Adjust FL601 so as to minimize amplitude of the chroma signal red flat portion.

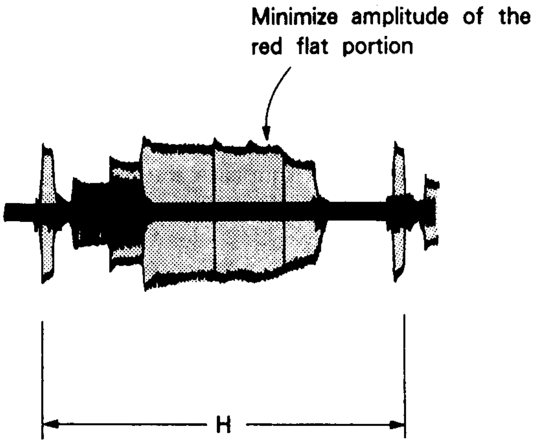


Fig. 8-20. Chroma emphasis fo adjustment

8-4-14. REC Y recording current adjustment (SV-35 Board)

Mode	Recording
Signal	Non-signal
Measurement Point	Pin ㊲ of IC501 (Fig. 8-22 Ⓐ)
Measuring Instrument	Oscilloscope
Adjusting Element	RV800
Specified Value	390 ± 10 mVp-p

Adjusting method :

1) Adjust to 390 ± 10 mVp-p with RV800.

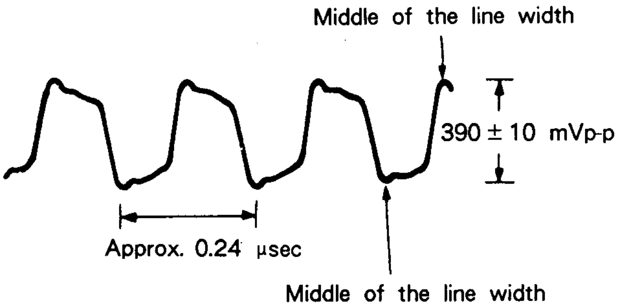


Fig. 8-21. REC Y recording current adjustment

8-4-15. REC C Recording Current Adjustment (SV-35 Board)

Mode	Recording
Signal	Color bar
Measurement Point	Pin ㊲ of IC501 (Fig. 8-22 Ⓐ)
Measuring Instrument	Oscilloscope
Adjusting Element	RV504
Specified Value	68 ± 3 mVp-p

Notes : 1) Always perform "REC AFM Recording Current Adjustment" after this adjustment.
2) Use an MP-type tape (level at Pin ⑮ of CN006 must be low).

Connections :

1) In order to prevent other recording signals from interfering , connect the following three connections with jumper wires :
   - Emitter of Q803 (REC Y) —— GND
   - Terminal on the C219 side of RV503 (Fig. 8-22 Ⓑ : REC ATF) —— GND
   - Terminal on the C006 side of RV505 (Fig. 8-22 Ⓒ : REC AFM) —— GND

   ∗Use the RP block shield case as GND.

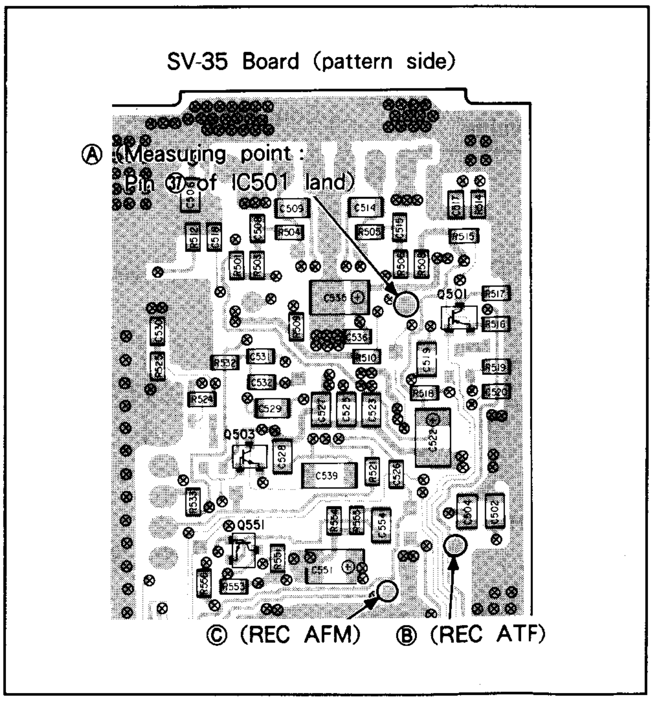

SV-35 Board (pattern side)
Ⓐ Measuring point : Pin ㊲ of IC501 land)
C509
C514
R504
R505
Q501
C536
Q503
C539
Q551
C551
Ⓒ (REC AFM)
Ⓑ (REC ATF)

Fig. 8-22.

Adjusting method :

1) Adjust to 68 ± 3 mVp-p with RV504.

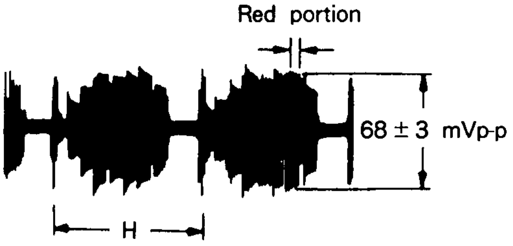

Red portion
68 ± 3 mVp-p
H

Fig. 8-23. REC C level adjustment

8-4-16. REC AFM Recording Current Adjustment (SV-35 Board)

Mode	Recording
Signal	Non-signal
Measurement Point	Pin ㊲ of IC501(Fig. 8-22 Ⓐ)
Measuring Instrument	Oscilloscope
Adjusting Element	RV505
Specified Value	17.0 ± 1.0 mVp-p

Notes : 1) Use an MP-type tape (level at Pin ⑮ of CN006 must be low).

2) If level at Pin ㊲ of IC501 is too low and difficult to measure, connect directly through a 100 Ω resistor as shown in the figure below rather than using a 10 : 1 probe.

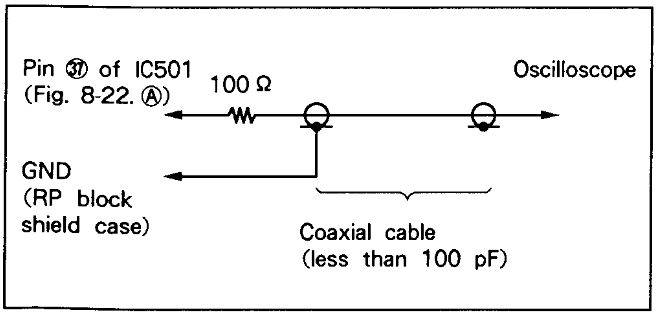

Pin ㊲ of IC501
(Fig. 8-22. Ⓐ)
100 Ω
Oscilloscope
GND
(RP block
shield case)
Coaxial cable
(less than 100 pF)

Fig. 8-24.

Connections :

1) In order to prevent other recording signals from interfering, connect the following two connections with jumper wires :
   - Emitter of Q803 (REC Y) —— GND
   - Terminal on the C219 side of RV503 (Fig. 8-22 Ⓑ : REC ATF) —— GND

   *Use the RP block shield case as GND.

Adjusting method :

1) Adjust to 17.0 ± 1.0 mVp-p with RV505.

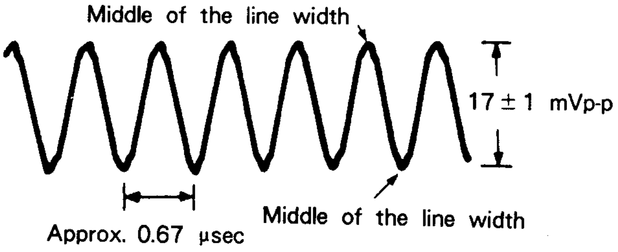

Middle of the line width
17 ± 1 mVp-p
Middle of the line width
Approx. 0.67 μsec

Fig. 8-25. AFM recording current adjustment

8-4-17. REC ATF Recording Current Adjustment (SV-35 Board)

Mode	Recording
Signal	Non-signal
Measurement Point	Pin ㊲ of IC501(Fig. 8-22 Ⓐ)
Measuring Instrument	Oscilloscope
Adjusting Element	RV503
Specified Value	13.5 ± 1.0 mVp-p

Notes : 1) Use an MP-type tape (level at Pin ⑮ of CN006 must be low).

2) If level at Pin ㊲ of IC501 is too low and difficult to measure, connect directly through a 100 Ω resistor as shown in the figure below rather than using a 10 : 1 probe.

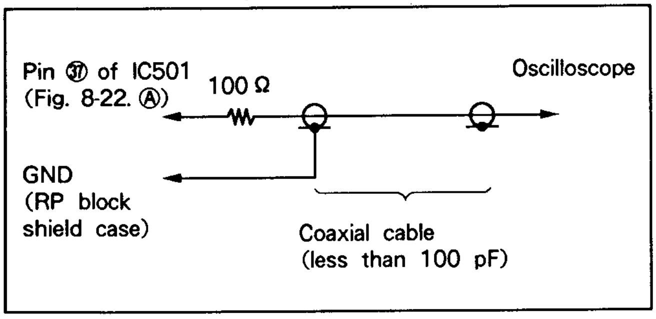

Pin ㊲ of IC501
(Fig. 8-22. Ⓐ)
100 Ω
Oscilloscope
GND
(RP block
shield case)
Coaxial cable
(less than 100 pF)

Fig. 8-26.

Connections :

1) In order to prevent other recording signals from interfering, make the following two connections with jumper wires :
   - Emitter of Q803 (REC Y) —— GND
   - Terminal on the C006 side of RV505 (Fig. 8-22 Ⓒ : REC AFM) —— GND

   *Use the RP block shield case as GND.

Adjusting method :

1) Adjust to 13.5 ± 1.0 mVp-p with RV503.

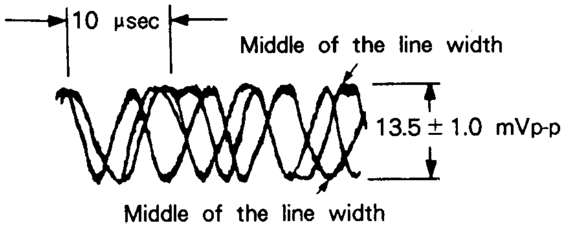

10 μsec
Middle of the line width
13.5 ± 1.0 mVp-p
Middle of the line width

Fig. 8-27. REC ATF recording current adjustment

8-4-18. Delay Chroma Gain Adjustment (SV-35 Board)

Mode	Playback pause (LP mode)
Signal	Alignment tape for operation check (WR5-3CL), color bars
Measurement Point	CH1 : Pin ㊼ of IC600 (or Emitter of Q904) CH2 : Pin ⑰ of IC900
Measuring Instrument	Oscilloscope (TRIG : CH2)
Adjusting Element	RV901
Specified Value	Delay chroma level is same as through chroma level

Adjusting method :

1) Adjust RV901 until the delay chroma level is the same as the through chroma level.

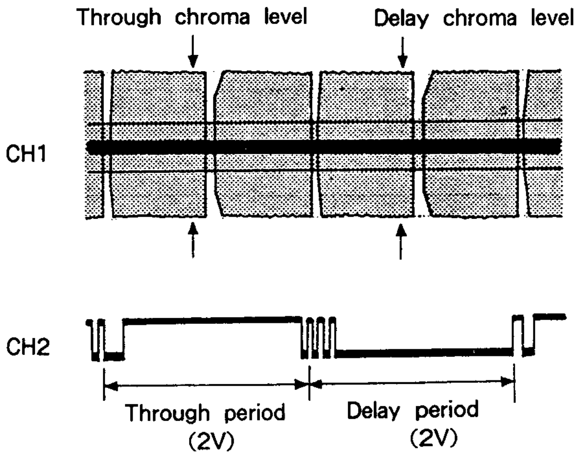

Through chroma level
Delay chroma level
CH1
CH2
Through period
(2V)
Delay period
(2V)

Fig. 8-28.

8-4-19. Quasi Burst Phase Adjustment (SV-35 Board)

1. Method using vectorscope

Mode	Playback
Signal	Tape with recorded color bars
Measurement Point	VIDEO OUT terminal
Measuring Instrument	Vectorscope
Adjusting Element	RV902
Specified Value	Phase of color luminance points in quasi burst mode is same as phase of color luminance points in through burst mode

Adjusting method :

1) Make a record of the phase of the color luminance points (especially red). (Through burst mode)
2) Connect Pin ㉑ of IC900 and Pin ① of IC900 with a diode (1SS119, etc.). (Quasi burst mode)

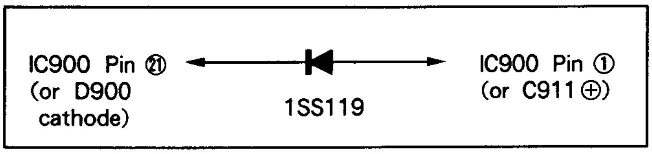

IC900 Pin ㉑
(or D900
cathode)
1SS119
IC900 Pin ①
(or C911 ⊕)

Fig. 8-29.

3) Adjust RV902 so that the phase of the color luminance points is the same as the phase recorded in 1).
4) Remove the diode.

2. Method using monitor TV

Mode	Playback
Signal	Tape with recorded color bars
Measurement Point	Confirmation on monitor TV screen
Measuring Instrument	
Adjusting Element	RV902
Specified Value	Minimum chroma flickering

Connection :

1) Connect Pin ㉑ of IC900 and Pin ④ of CN018 (RF SWP) using a diode (1SS119, etc.).

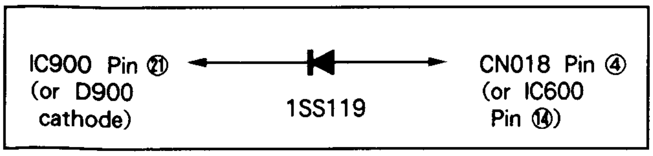

IC900 Pin ㉑
(or D900
cathode)
1SS119
CN018 Pin ④
(or IC600
Pin ⑭)

Fig. 8-30.

Adjusting method :

1) Set the color level of the monitor TV to maximum.
2) Adjust RV902 for minimum chroma flickering.

8-4-20. Delay Burst Phase Adjustment (SV-35 Board)

Mode	Playback pause (LP mode)
Signal	Alignment tape for operation check (WR5-3CL), color bars
Measurement Point	Confirmation on monitor TV screen
Measuring Instrument	
Adjusting Element	RV903
Specified Value	Minimum chroma flickering

Adjusting method :

1) Set the color level of the monitor TV to maximum.
2) Rotate RV903 fully in the counterclockwise direction (↺).
3) Slowly rotate RV903 in the clockwise direction and stop at the position where there is minimum chroma flicker.

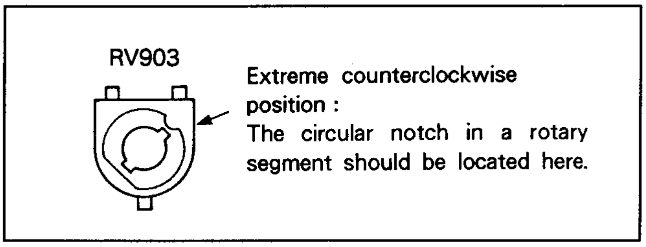

RV903
Extreme counterclockwise position :
The circular notch in a rotary segment should be located here.

Fig. 8-31.

8-5. LCD SYSTEM ADJUSTMENT

Note : You will receive an electric shock if you touch the back-light holder. When the back light is not in use, remove the back-light drive unit.

Preparations :

1) The back-light drive unit is required only for white balance check, V COM DC adjustment and ANTI PAL adjustment. Remove it before every other adjustment/check.
2) Set the following VRs as below, unless otherwise indicated :
   BRIGHT (RV302) …… Mechanical center
   COLOR (RV902)
   …… Position in which voltage at Pin ⑨ of IC901 on the RG-5 board is 1.20 ± 0.05V.
3) External sync
   …… J701 (VIDEO IN) on the JK-34 board
4) The following devices are used for LCD system adjustment :
   Fluorescent tube holder jig (J-6082-022-A)
   COMMON voltage adjusting jig (J-6082-024-A)

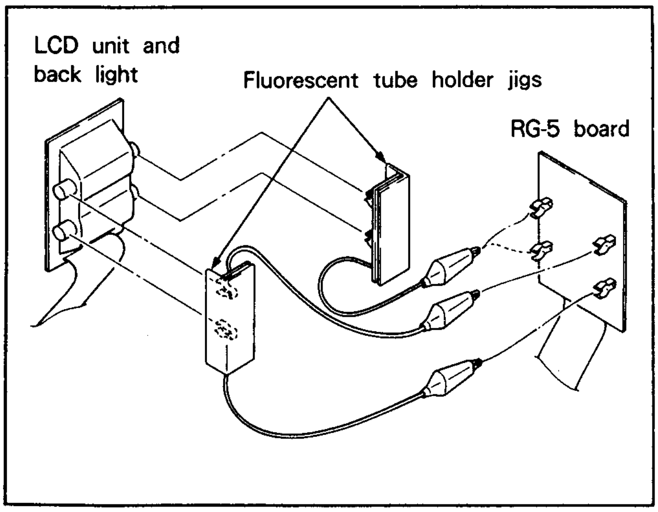

LCD unit and back light
Fluorescent tube holder jigs
RG-5 board

Fig. 8-32. Usage of the fluorescent tube holders

[Input video signal for adjustment]
Unless indicated otherwise input a color bar signal into the video input terminal as the adjustment video input signal.

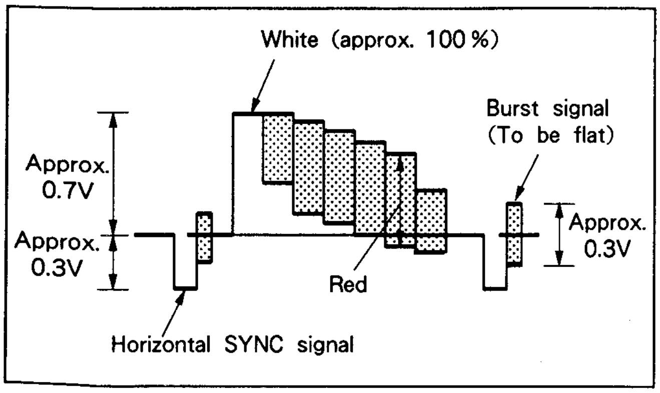

White (approx. 100%)
Burst signal
(To be flat)
Approx. 0.7V
Approx. 0.3V
Approx. 0.3V
Red
Horizontal SYNC signal

Fig. 8-33. Color bar signal

8-5-1. Oscillation Frequency Adjustment (RG-5 Board)

Mode	Power on
Signal	Non-signal
Measurement Point	Pin ⑨ of IC901
Adjusting Element	CV901
Specified Value	4433450 ± 10 Hz

Adjusting method :

1) Adjust to 4433450 ± 10 Hz with CV901.

8-5-2. Contrast Adjustment (RG-5 Board)

Mode	Power on
Signal	Color bar
Measurement Point	CH1 : Pin ⑧ of CN905 CH2 : Pin ② of CN905
Measuring Instrument	Oscilloscope (TRIG : CH2)
Adjusting Element	RV901
Specified Value	4.0 ± 0.1 Vp-p

Adjusting method :

1) Adjust voltage between white (100%) and pedestal sections to 4.0 ± 0.1 Vp-p with RV901.

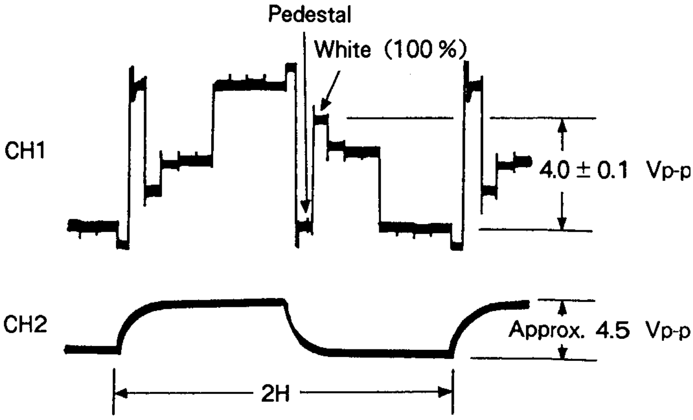

Pedestal
White (100%)
CH1
4.0 ± 0.1 Vp-p
CH2
Approx. 4.5 Vp-p
2H

Fig. 8-34.

8-5-3. Common-bias Preset Adjustment (RG-5 Board)

Mode	Power on
Signal	Color bar
Measurement Point	Collector of Q908 (V_G)
Measuring Instrument	Oscilloscope (DC range)
Adjusting Element	RV905
Specified Value	− 6.2 ± 0.1 Vdc

Adjusting method :

1) Adjust DC level of the G signal pedestal to − 6.2 ± 0.1 Vdc with RV905.

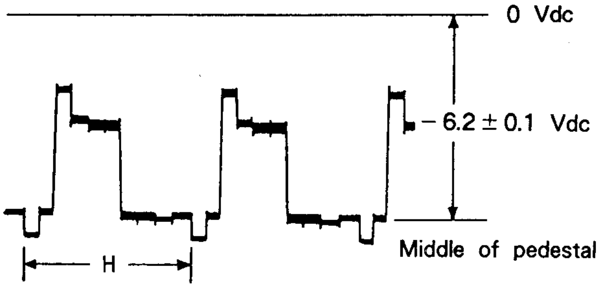

0 Vdc
− 6.2 ± 0.1 Vdc
Middle of pedestal
H

Fig. 8-35.

8-5-4. R, B P-P Gain Adjustment (RG-5 Board)

Mode	Power on
Signal	Color bar
Measurement Point	Collector of Q909 (V_R) Collector of Q907 (V_B)
Measuring Instrument	Oscilloscope
Adjusting Element	RV907 (R gain 1) RV906 (B gain 1)
Specified Value	(Gp-p) ± 0.05 Vp-p

Adjusting method :

1) Connect the oscilloscope to the collector of Q909 (V_R).
2) Adjust voltage between white (100%) and pedestal sections to (Gp-p) ± 0.05 Vp-p with RV907 (R P-P gain).
3) Connect the oscilloscope to the collector of Q907 (V_B).
4) Adjust voltage between white (100%) and pedestal sections to (Gp-p) ± 0.05 Vp-p with RV906 (B P-P gain).
5) Connect the oscilloscope to the collector of Q908 (V_G)
6) Measure the voltage between white (100 %) and pedestal section. (= Gp-p)

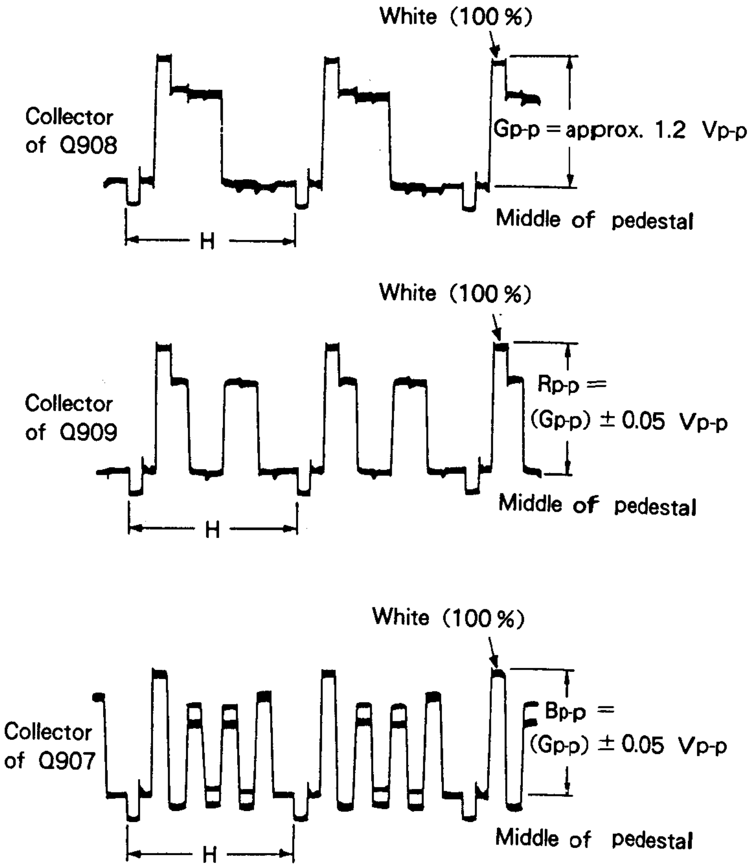

White (100 %)
Collector of Q908
Gp-p = approx. 1.2 Vp-p
Middle of pedestal
H
White (100 %)
Collector of Q909
Rp-p = (Gp-p) ± 0.05 Vp-p
Middle of pedestal
H
White (100 %)
Collector of Q907
Bp-p = (Gp-p) ± 0.05 Vp-p
Middle of pedestal
H

Fig. 8-36.

8-5-5. R, B DC Gain Adjustment (RG-5 Board)

Mode	Power on
Signal	Color bar
Measurement Point	Collector of Q909 (V_R) Collector of Q907 (V_B)
Measuring Instrument	Oscilloscope (DC range)
Adjusting Element	RV909 (R gain 2) RV908 (B gain 2)
Specified Value	V_G ±0.05 Vp-p

Adjusting method :

1) Connect the oscilloscope to the collector of Q908 (V_G).
2) Measure DC voltage of the G signal pedestal and record it (−6.2 ± 0.2 Vdc).
3) Connect the oscilloscope to the collector of Q909 (V_R).
4) Adjust the R signal pedestal DC voltage to the value obtained in step 1) (G signal pedestal DC voltage) with RV909 (R DC gain).
5) Connect the oscilloscope to the collector of Q907 (V_B).
6) Adjust the B signal pedestal DC voltage to the value obtained in step 1) (G signal pedestal DC voltage) with RV908 (B DC gain).

White Balance Check :

1) Connect the back-light unit to the LCD rear using the fluorescent tube holder jigs (see Fig. 8-28).
   Note : Proceed carefully as fluorescent tubes are highly charged.
2) Connect Pin ① of FL902 to GND with a jumper wire.
3) Observe the LCD screen and confirm that no color is displayed.
4) If white balance is not satisfactory, repeat R, B DC gain adjustment until no color is displayed on the LCD.
5) Remove the jumper wire.

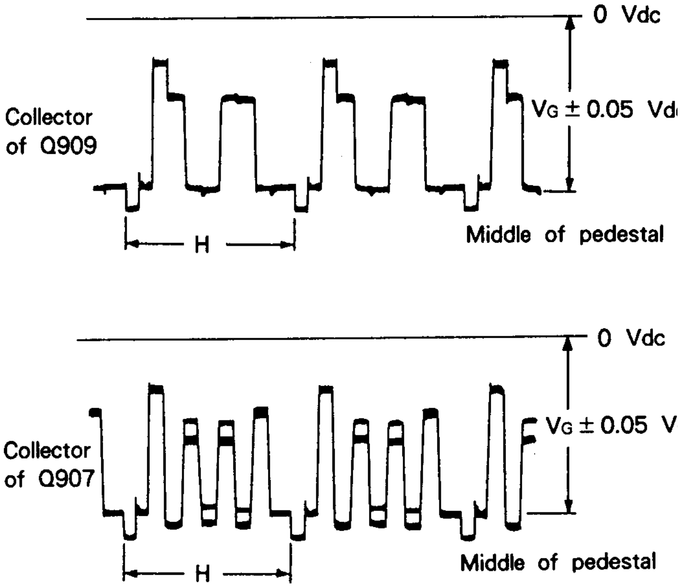


Fig. 8-37.

8-5-6. Anti PAL Adjustment 1 (RG-5 Board)

Mode	Power on
Signal	Video signal*1 with anti PAL signal
Measurement Point	Collector of Q908
Measuring Instrument	Oscilloscope
Adjusting Element	RV920
Specified Value	Minimum amplitude of anti PAL sections

∗ 1. The waveform varies according to the signal.

Adjusting method :

1) Set the COLOR knob (RV902) to the MAX position.
2) Adjust the amplitude of the anti PAL sections to minimum with RV902.

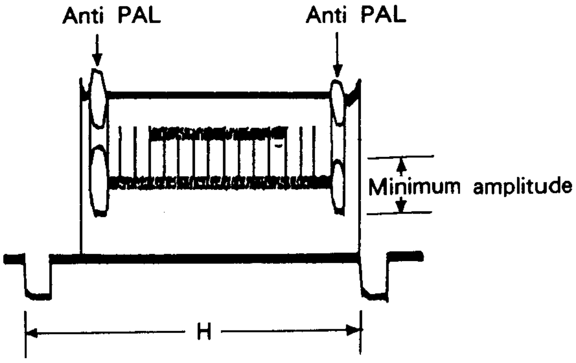


Fig. 8-38.

8-5-7. Anti PAL Adjustment 2 (RG-5 Board)

Mode	Power on
Signal	Video signal*1 with anti PAL signal
Measurement Point	LCD screen
Measuring Instrument	
Adjusting Element	CV902
Specified Value	No coloring of anti PAL sections

* 1. The pattern and anti PAL signal position vary according to the signal.

Connection :

1) Perform adjustment with the backlight and backlight drive unit attached.

Adjusting method :

1) Set the COLOR knob (RV902) to the MAX position.
2) Adjust CV902 for minimum coloring of anti PAL sections.

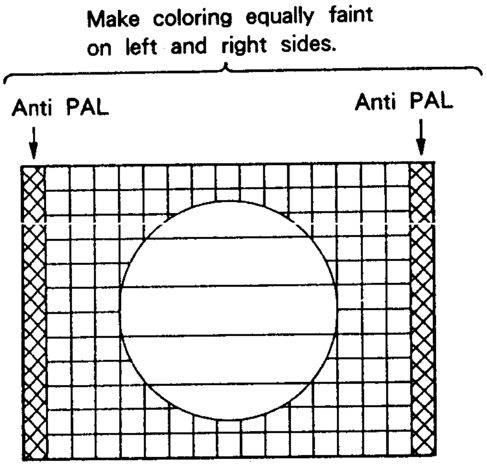

Make coloring equally faint on left and right sides.
Anti PAL
Anti PAL

Fig. 8-39.

8-5-8. Anti PAL Adjustment 3 (RG-5 Board)

Mode	Power on
Signal	Color bars
Measurement Point	Collector of Q908
Measuring Instrument	Oscilloscope
Adjusting Element	T901
Specified Value	Minimum amplitude of "green" section

Adjusting method :

1) Set the COLOR knob (RV902) to the MAX position.
2) Adjust the amplitude of the "green" section to minimum with T901.

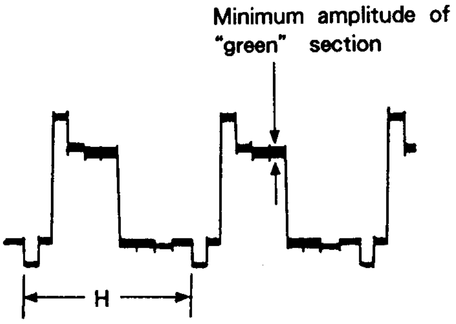

Minimum amplitude of "green" section
H

Fig. 8-40.

8-5-9. V COM DC Adjustment (RG-5 Board)

Mode	Power on
Signal	Color bar
Measurement Point	LCD screen
Measuring Instrument	Oscilloscope
Adjusting Element	RV912
Specified Value	Minimum amplitude of flicker waveform

Notes : 1) This adjustment can be performed from the LCD block rear with the unit assembled.
2) Prevent external light from getting into the COMMON voltage adjusting jig.

Adjusting method :
1) Attach the COMMON voltage adjusting jig sensor to the LCD screen (place the LCD facing down so that no external light gets into the sensor).
2) Connect the oscilloscope to the COMMON voltage adjusting jig.
3) Turn RV912 and confirm that the flicker waveform in Fig. 8-38 is output (if it is not, confirm the sensor position and external light conditions, then try turning the BRIGHT control).
4) Adjust RV912 so as to minimize flicker waveform amplitude.

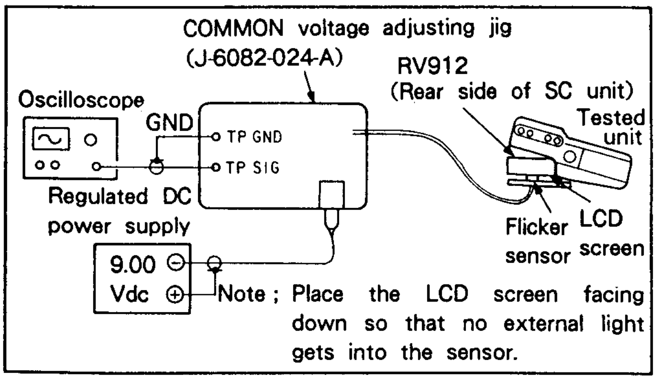

COMMON voltage adjusting jig
(J-6082-024-A)
RV912
(Rear side of SC unit)
Oscilloscope
GND
TP GND
TP SIG
Tested unit
Regulated DC power supply
9.00 Vdc
⊖
⊕
Flicker sensor
LCD screen
Note ; Place the LCD screen facing down so that no external light gets into the sensor.

Fig. 8-41.

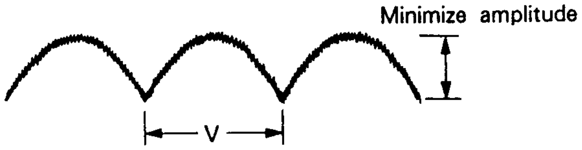

Minimize amplitude
V

Fig. 8-42.

8-6. TIMER SYSTEM ADJUSTMENT

- Proceed as follows to set the TT check mode, which is required for timer system adjustment.

1) Turn the regulated power supply off.
2) Connect the TT check land (Fig. 8-43. Ⓐ) and TP303 (GND) with a jumper wire.
3) Turn the regulated power supply and the POWER switch on.
4) Remove the jumper wire attached in step 2).
5) Perform timer system adjustment in this condition.

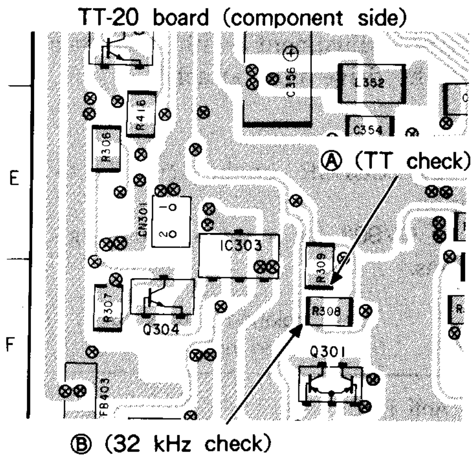

TT-20 board (component side)
Ⓐ (TT check)
Ⓑ (32 kHz check)
E
F
C356
L352
C354
R416
R306
CN301
IC303
R309
R308
R307
Q304
Q301
FB403

Fig. 8-43.

8-6-1. Clock Precision Adjustment (TT-20 Board)

Mode	Stop (power on)
Measurement Point	Pin ㊾ of IC301
Measuring Instrument	Frequency counter
Adjusting Element	CV301
Specified Value	16.38400 ± 0.00020 kHz

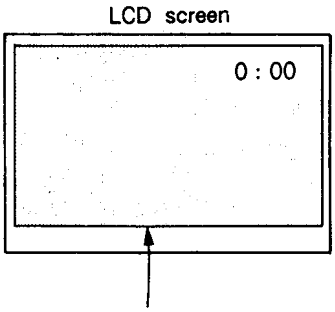
Adjusting method :
1) Connect the 32 kHz check land (Fig. 8-43. Ⓑ) and TP303 (GND) with a jumper wire to set the check mode.
2) Adjust oscillation frequency to 16.38400 ± 0.00020 kHz with CV301.
3) Remove the jumper wire attached in step 1).

8-6-2. Character Position Adjustment (TT-20 Board)

Mode	Power on
Signal	Color bar
Measurement Point	LCD screen
Measuring Instrument	
Adjusting Element	CV351
Specified Value	Black frame on horizontal center of screen.

Adjusting method :

1) Connect the TT check land (Fig. 8-43. Ⓐ) and TP303 (GND) with a jumper wire.
2) Press the CLOCK SET button of the LCD block and confirm that the black frame and the "0 : 00" indication appear on the LCD screen (adjust the LCD block BRIGHT VR so that the black frame can be seen clearly).
3) Adjust CV351 so that the black frame gets on the horizontal center of the screen.
4) Press the LCD block NEXT button twice to clear the black frame.
5) Remove the jumper wire attached in step 1).



Adjust so that the black frame gets on the horizontal center of the screen.

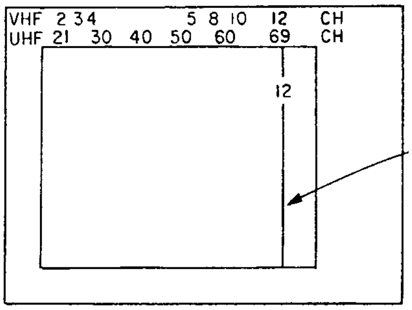
Fig. 8-44.

8-6-3. Channel Display Position Adjustment (TT-20 Board)

Mode	Power on
Signal	VHF 12 channel
Measurement Point	LCD screen
Measuring Instrument	
Adjusting Element	RV372
Specified Value	Cursor indicating the received channel

Adjusting method :

1) Set the INPUT SELECT switch (S101 on the SV-35 board) to the TUNER position.
2) Receive the VHF 12 channel.
3) While pressing the INDICATOR button (S301 on the TT-20 board), move the green cursor to the channel 12 position with RV372.
4) Select channel 1 and confirm that the green cursor is displayed on the channel 1 position.



Move the green cursor to the channel 12 position.

Fig. 8-45.

8-7. AUDIO SYSTEM ADJUSTMENT

- Use a color bar signal as input video signal for adjustment.

[Connection of Audio Measuring Devices]
Besides video measuring devices, connect audio measuring devices as shown in the figure below, and perform the adjustment in input select switch LINE position.

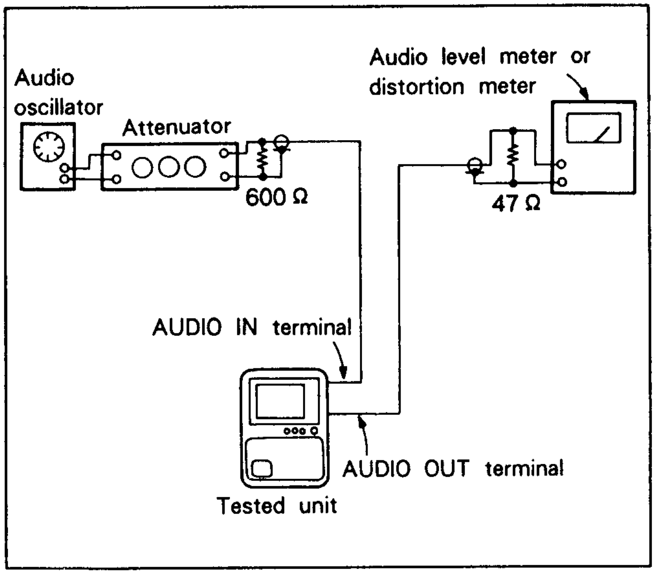


Fig. 8-46.

8-7-1. AFM Audio System Check

1. AFM carrier frequency check (SV-35 board)

Mode	Recording (SP mode)
Signal	Non-signal
Measurement Point	Pin ㉑ of HIC001 (REC AFM RF)
Measuring Instrument	Frequency counter
Specified Value	1.50 ± 0.01 MHz

Checking method :
1) Turn the audio oscillator output off.
2) Confirm that AFM carrier frequency is 1.50 ± 0.01 MHz.

2. AFM deviation check

Mode	Playback
Signal	Alignment tape for operation check (WR5-3CSP)
Measurement Point	AUDIO OUT terminal
Measuring Instrument	Audio level meter
Specified Value	− 10 ± 2 dBs

Checking method :
1) Confirm that audio output level is − 10 ± 2 dBs.

3. E-E output level check

Mode	E-E
Signal	400 Hz, − 10 dBs
Measurement Point	AUDIO OUT terminal
Measuring Instrument	Audio level meter
Specified Value	− 10 ± 2 dBs

Checking method :
1) Confirm that audio output level is − 10 ± 2 dBs.

4. Overall level characteristic check

Mode	Self-recording and playback
Signal	400 Hz, − 10 dBs
Measurement Point	AUDIO OUT terminal
Measuring Instrument	Audio level meter
Specified Value	− 10 ± 2 dBs

Checking method :
1) Record the signal.
2) Play back the recorded section.
3) Confirm that audio output level is − 10 ± 2 dBs.

5. Overall frequency characteristic check

Mode	Self-recording and playback
Signal	Ⓐ 400 Hz, − 20 dBs Ⓑ 30 Hz, − 20 dBs Ⓒ 10 Hz, − 20 dBs
Measurement Point	AUDIO OUT terminal
Measuring Instrument	Audio level meter
Specified Value	30 Hz and 14 kHz playback output level is 0 ± 3 dB when 400 Hz playback output level is set to 0 dB

Checking method :

1) Record the Ⓐ to Ⓒ signals in that order.
2) Play back the recorded section.
3) Confirm that 30 Hz and 14 kHz playback output level is 0 ± 3 dB when 400 Hz playback output level is set to 0 dB.

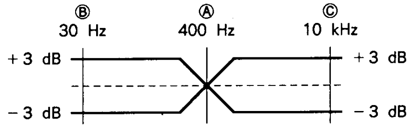


Fig. 8-47. AFM Overall frequency characteristic

6. Overall distortion check

Mode	Self-recording and playback
Signal	400 Hz, − 10 dBs
Measurement Point	AUDIO OUT terminal
Measuring Instrument	Distortion meter
Specified Value	0.3 % or less *1

Checking method :

1) Record the signal.
2) Play back the recorded section.
3) Confirm that distortion is 0.3 % or less. *1
   *1 When using a 30 kHz LPF.

7. Overall noise level check

Mode	Self-recrding and playback
Signal	Non-signal (Insert a shorting plug into the AUDIO IN terminal)
Measurement Point	AUDIO OUT terminal
Measuring Instrument	Audio level meter
Specified Value	− 70 dBs or less *2

Checking method :

1) Record the signal.
2) Play back the recorded section.
3) Confirm that noise level is − 70 dBs or less. *2
   *2 When using an IHF-A hearing compensation filter.

8-8. TUNER SYSTEM ADJUSTMENT

8-8-1. RF AGC Adjustment (TT-20 Board)

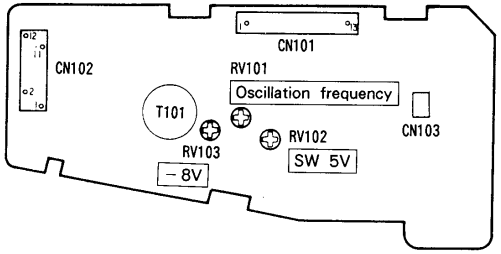
Mode	E-E
Signal	TV broadcast signal
Measuring Instrument	RV101

Adjusting method :

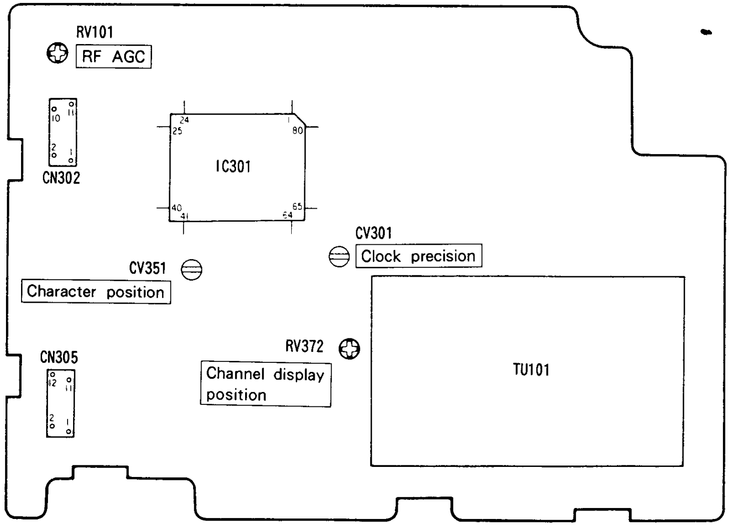
1) Adjust the TV monitor to maximum contrast and receive the TV broadcast signal.
2) Turn RV101 until snow noise appears.
3) Turn RV101 in the opposite direction until where snow noise disappears.
4) Select all channels in succession and confirm that no intermodulation beat, picture breakage or snow noise occurs.

ARRANGEMENT DIAGRAM FOR ADJUSTMENT PARTS

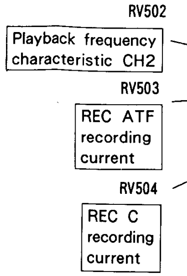
PS-181 BOARD (COMPONENT SIDE)


CN102
CN101
RV101
Oscillation frequency
T101
RV103
− 8V
RV102
SW 5V
CN103

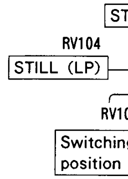
TT-20 BOARD (COMPONENT SIDE)


RV101
RF AGC
CN302
IC301
CV301
Clock precision
CV351
Character position
CN305
RV372
Channel display position
TU101

SV-35 BOAR


RV502
Playback frequency characteristic CH2
RV503
REC ATF recording current
RV504
REC C recording current

SV-35 BOA


ST
RV104
STILL (LP)
Switchin
position

yback

lug into
inal)

al

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pensation

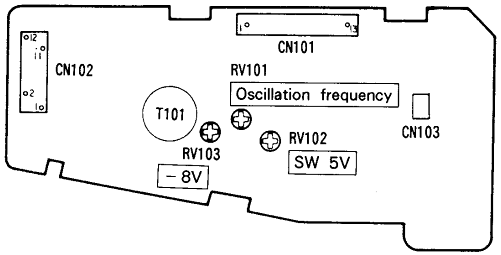
trast and

til where

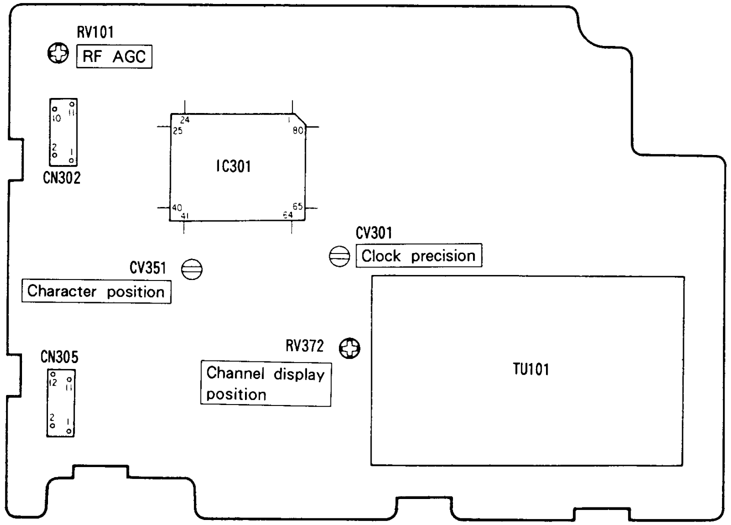
firm that
or snow

ARRANGEMENT DIAGRAM FOR ADJUSTMENT PARTS

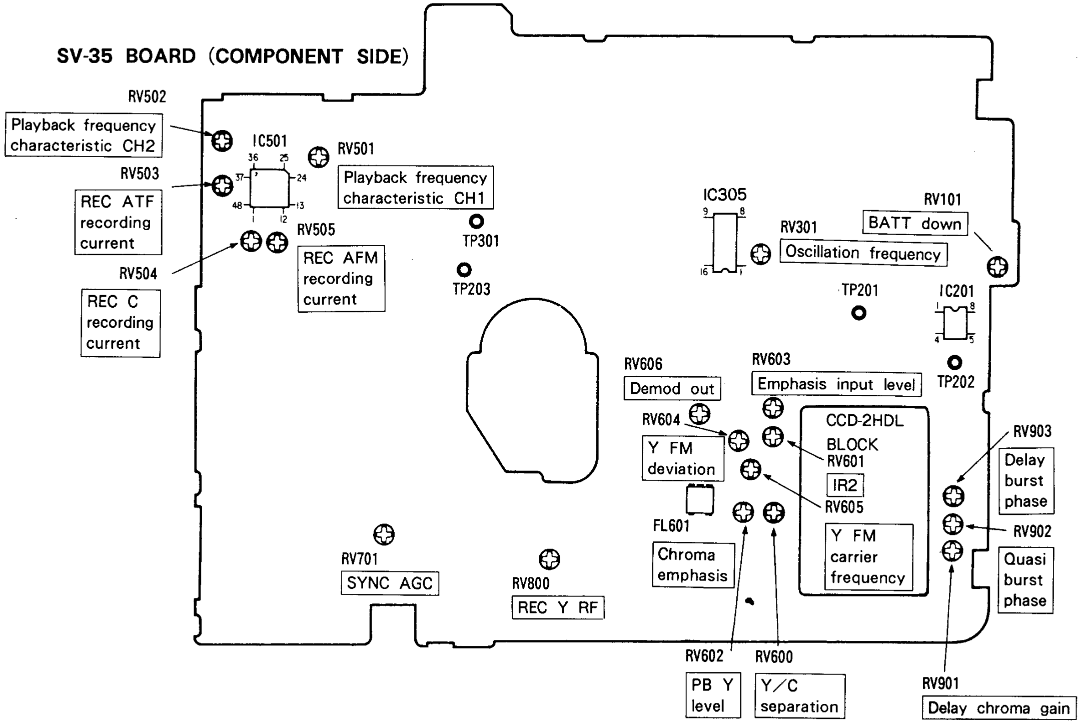
PS-181 BOARD (COMPONENT SIDE)


CN101
CN102
RV101
Oscillation frequency
T101
RV103
- 8V
RV102
SW 5V
CN103

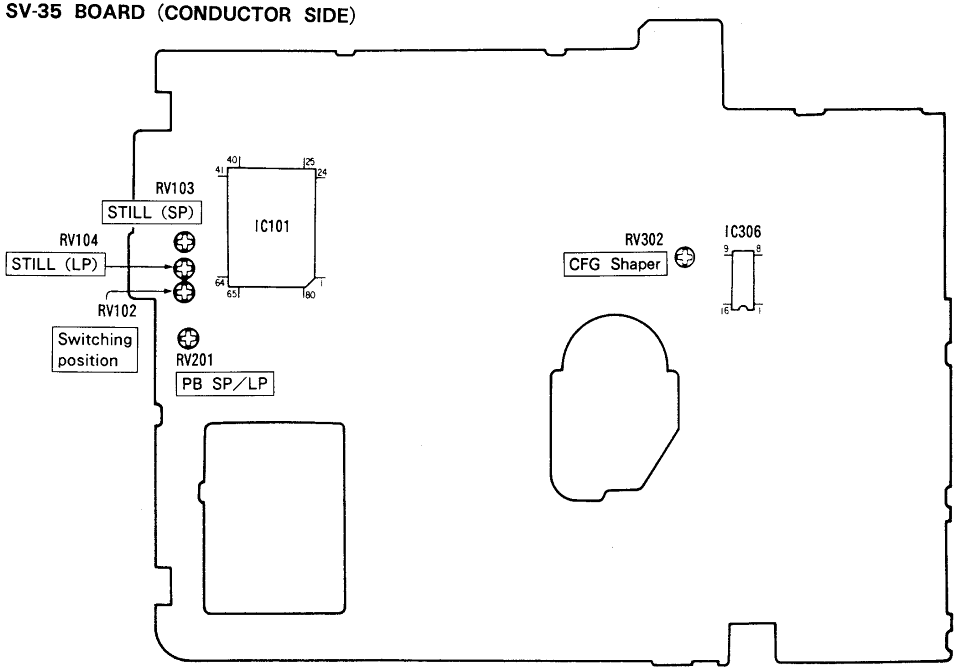
TT-20 BOARD (COMPONENT SIDE)


RV101
RF AGC
CN302
IC301
CV301
Clock precision
CV351
Character position
CN305
RV372
Channel display position
TU101

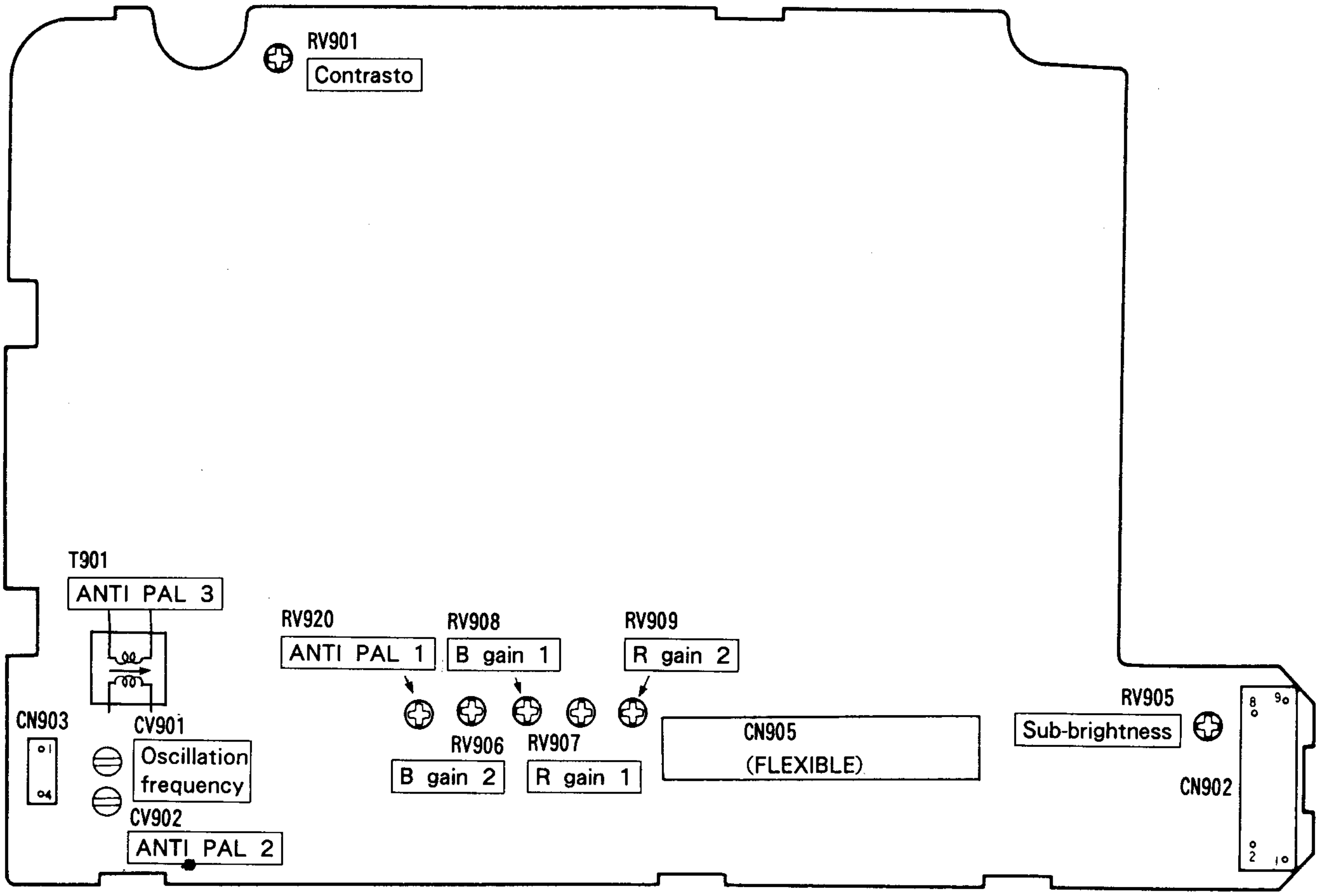
SV-35 BOARD (COMPONENT SIDE)


RV502
Playback frequency characteristic CH2
IC501
RV501
Playback frequency characteristic CH1
RV503
REC ATF recording current
RV505
REC AFM recording current
RV504
REC C recording current
TP301
TP203
IC305
RV301
Oscillation frequency
RV101
BATT down
TP201
IC201
TP202
RV606
Demod out
RV603
Emphasis input level
RV604
Y FM deviation
CCD-2HDL BLOCK
RV601
IR2
RV605
Y FM carrier frequency
FL601
Chroma emphasis
RV903
Delay burst phase
RV902
Quasi burst phase
RV701
SYNC AGC
RV800
REC Y RF
RV602
PB Y level
RV600
Y/C separation
RV901
Delay chroma gain

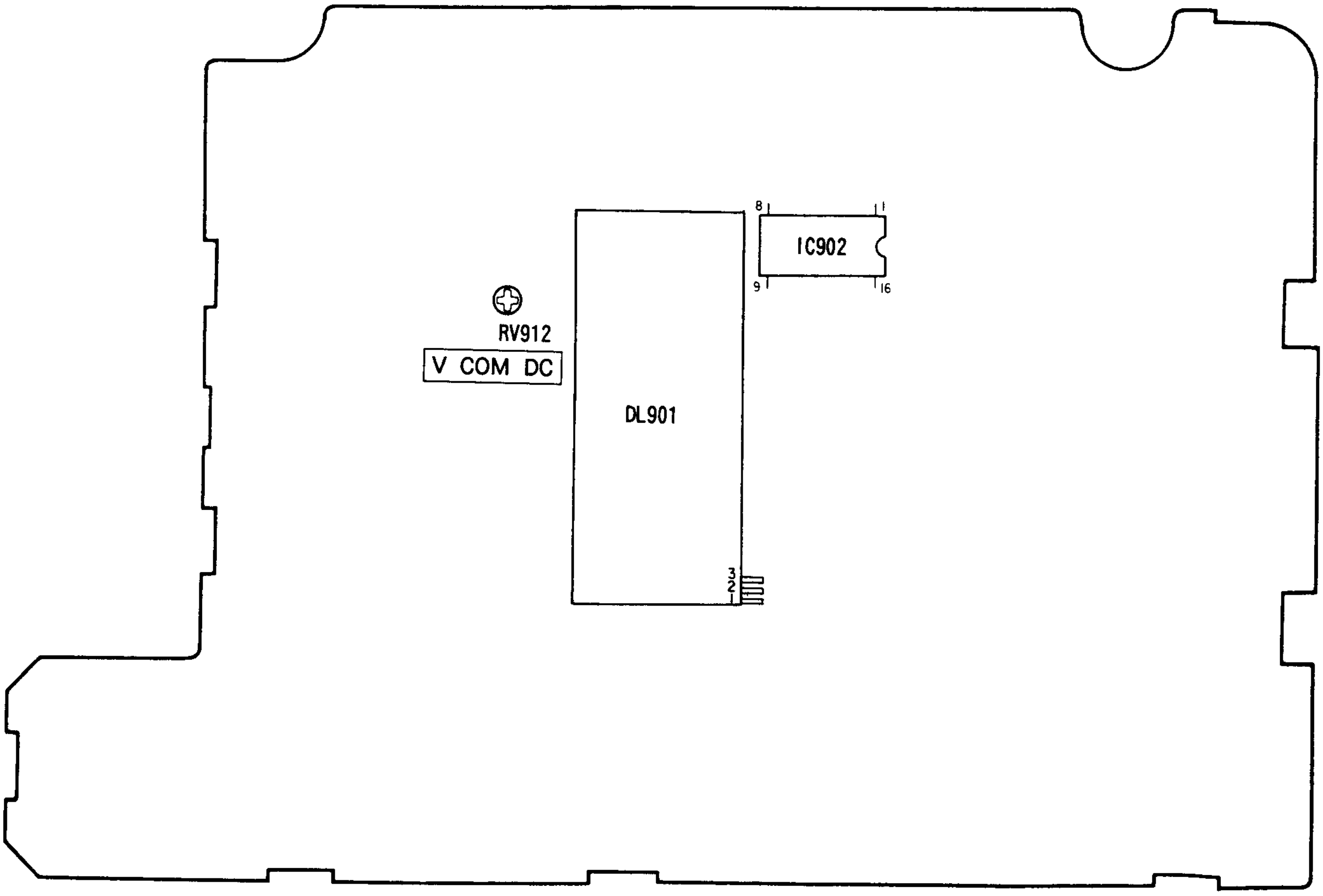
SV-35 BOARD (CONDUCTOR SIDE)


RV103
STILL (SP)
IC101
RV104
STILL (LP)
RV102
Switching position
RV201
PB SP/LP
RV302
CFG Shaper
IC306

RG-5 BOARD (COMPONENT SIDE)


RV901
Contrasto
T901
ANTI PAL 3
RV920
ANTI PAL 1
RV908
B gain 1
RV909
R gain 2
RV905
Sub-brightness
CN903
CV901
Oscillation frequency
RV906
B gain 2
RV907
R gain 1
CN905
(FLEXIBLE)
CN902
CV902
ANTI PAL 2

RG-5 BOARD (CONDUCTOR SIDE)


IC902
RV912
V COM DC
DL901

GV-8E

SONY

SERVICE MANUAL

REVISED

AEP Model
UK Model
E Model

Discard GV-8E Supplement-1 (No. 9-972-946-81)
previously issued.

SUPPLEMENT-1

Because the completed service manual that has already been issued, had no part informations such as cabinet, etc. for Italian model, please use this supplement-1 together with the completed service manual.

☛ **:Added or Corrected Portion**

SECTION 5 EXPLODED VIEWS

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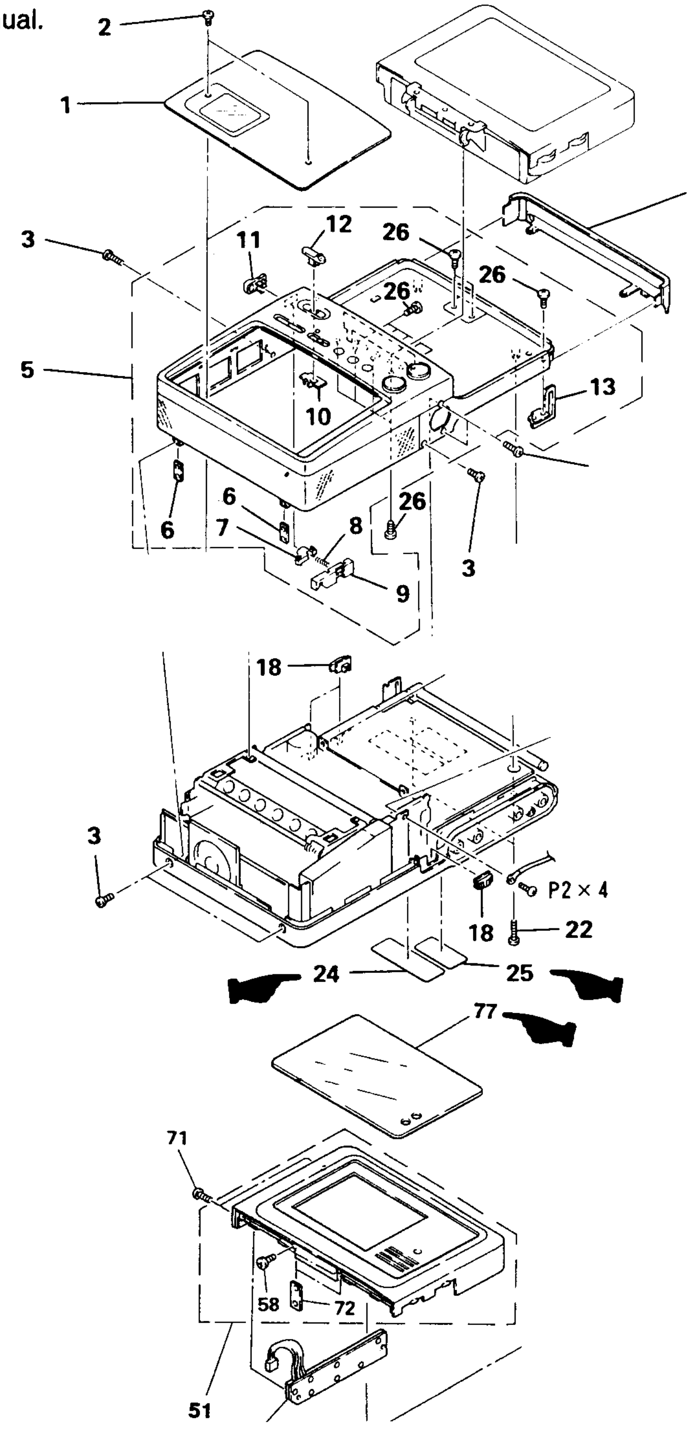
5-1. CABINET (UPPER) ASSEMBLY

No.	Part No.	Description	Remark
1	X-3726-870-1	LID ASSY, CASSETTE COMPARTMENT (AEP, UK, E, ITALIAN MODEL) ☛	
	X-3726-876-1	LID ASSY, CASSETTE COMPARTMENT (WEST GERMANY MODEL)	
5	A-7080-699-A	CABINET BLOCK ASSY, UPPER (AEP, UK, E MODEL)	6-13, 26
	A-7080-759-A	CABINET BLOCK ASSY, UPPER (WEST GERMANY MODEL)	6-13, 26
☛	A-7080-766-A	CABINET BLOCK ASSY, UPPER (ITALIAN MODEL)	6-13, 26
24	* 3-730-157-01	LABEL, MODEL NUMBER(AE) (AEP, UK, E MODEL)	
	* 3-730-179-01	LABEL, MODEL NUMBER(WG) (WEST GERMANY MODEL)	
☛	* 3-736-405-01	LABEL, ET (ITALIAN MODEL)	

Page. 124
5-2. SC UNIT ASSEMBLY

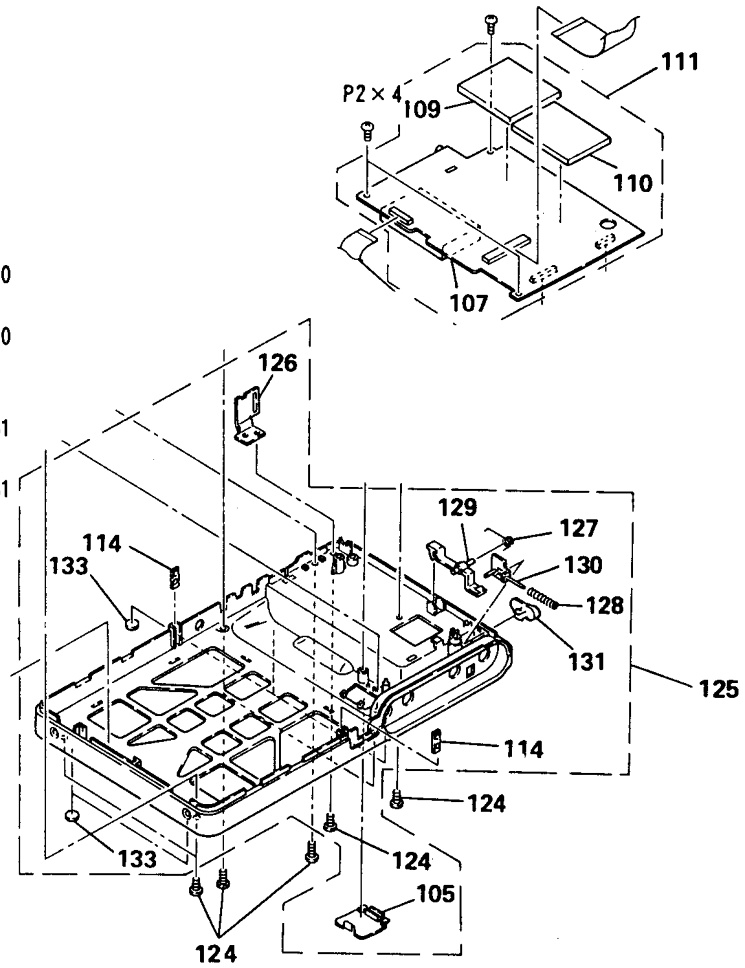
No.	Part No.	Description	Remark
51	X-3726-868-1	CABINET (UPPER) ASSY, SC (AEP, UK, E, WEST GERMANY MODEL)	58, 72
☛	X-3726-891-1	CABINET (UPPER) ASSY, SC (ITALIAN MODEL)	58, 72
77*	3-728-933-21	WINDOW, SC (AEP, UK, E, WEST GERMANY MODEL)	
	3-728-933-31	WINDOW, SC (ITALIAN MODEL)	

***Note:** Supplied method of SC window has been changed.
SC window has been supplied separately although it was included in SC cabinet (upper) assy.



Page. 125
5-3. CABINET (LOWER) ASSEMBLY

No.	Part No.	Description	Remark
107	1-465-136-11	TUNER PACK (EC-EE2585)(TU101) (AEP, UK, E MODEL)	
	1-465-136-21	TUNER PACK (EC-EE2585G)(TU101) (WEST GERMANY, ITALIAN MODEL) ☛	
111	*A-7061-463-A	TT-20 BOARD, COMPLETE (WEST GERMANY, ITALIAN MODEL) ☛	107, 109, 110
	*A-7061-472-A	TT-20 BOARD, COMPLETE (AEP, UK, E MODEL)	107, 109, 110
125	A-7080-725-A	CABINET BLOCK ASSY, BOTTOM (AEP, UK, E, WEST GERMANY MODEL)	105, 114, 124, 126-131
☛	A-7080-768-A	CABINET BLOCK ASSY, BOTTOM (ITALIAN MODEL)	105, 114, 124, 126-131



SECTION 6 ELECTRICAL PARTS LIST

Page. 140

No.	Part No.	Description	Remark
	*A-7061-463-A	TT-20 BOARD, COMPLETE (Ref. No. 1000 series) ********************* (WEST GERMANY, ITALIAN MODEL) ☛	
	*A-7061-472-A	TT-20 BOARD, COMPLETE (Ref. No. 1000 series) ********************* (AEP, UK, E MODEL)	

Page. 143

No.	Part No.	Description	Remark
		TUNER	
TU101	1-465-136-11	TUNER PACK (EC-EE2585) (AEP, UK, E MODEL)	
	1-465-136-21	TUNER PACK (EC-EE2585G) (WEST GERMANY, ITALIAN MODEL) ☛	

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Part No.	Description	Remark
☛ 1-417-176-11	DISTRIBUTOR, ANTENNA	
☛ 1-574-517-11	CORD, CONNECTION	
3-786-473-11	MANUAL, INSTRUCTION(ENGLISH) (AEP, UK, E MODEL)	
3-786-473-41	MANUAL, INSTRUCTION (FRENCH, GERMANY, SPANISH) (AEP, E MODEL)	
3-786-473-51	MANUAL, INSTRUCTION (DUTCH, SWEDISH, ITALIAN)(AEP MODEL)	
☛ 3-786-473-61	MANUAL, INSTRUCTION (ITALIAN) (ITALIAN MODEL)	
☛ 3-786-473-71	MANUAL, INSTRUCTION (GERMANY) (WEST GERMANY)	

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Part No.	Description	Remark
*3-728-891-11	INDIVIDUAL CARTON (AEP, UK, E MODEL)	
*3-728-891-21	INDIVIDUAL CARTON (WEST GERMANY MODEL)	
☛ *3-728-891-31	INDIVIDUAL CARTON (ITALIAN MODEL)	

GV-8E

SONY®

SERVICE MANUAL

AEP Model
UK Model
E Model
Australian Model

SUPPLEMENT-2

Subject: Australian model addition

- Australian model was added in GV-8E.
- Refer to E model (GV-8E) Service Manual previously issued for the information of Australian model.
- The following instruction manual is used in Australian model.

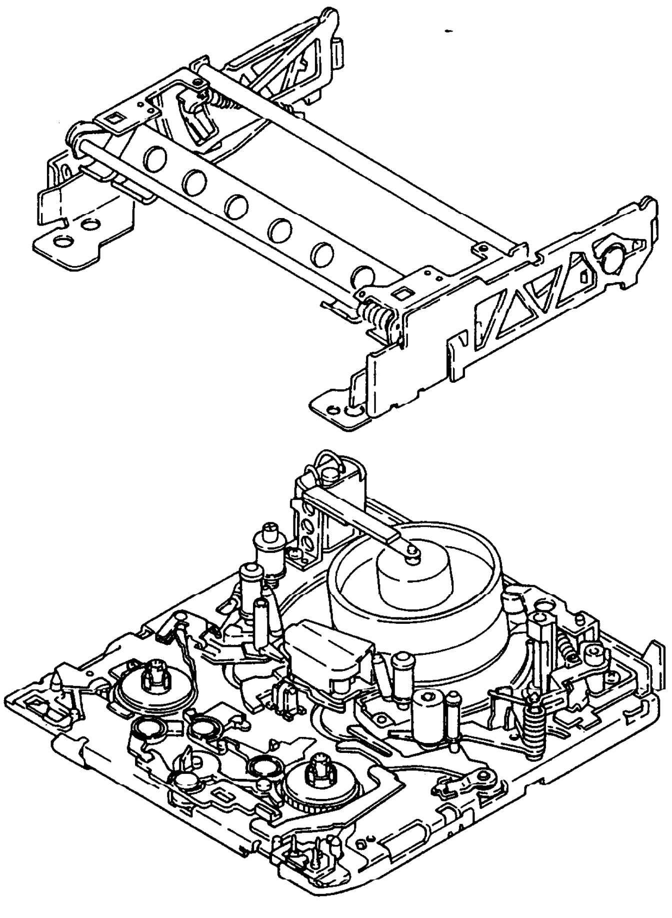
Part No.	Description
3-786-473-11	MANUAL, INSTRUCTION(ENGLISH) (AEP, UK, E, AUSTRALIAN MODEL)

mm Video MECHANICAL ADJUSTMENT MANUAL III

U MECHANISM

Video 8

Please use in conjunction with the SERVICE MANUAL.



8 MECHANISM DECK

SONY®

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 1-1-2. Setting the Playback Mode 3
 1-1-3. Eject Operation 3
1-2. The Mode Selector 4
 1-2-1. Name of Each Part (external) 4
 1-2-2. Connections 4
 1-2-3. Handling 4

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2-2. Tape Path Cleaning 5
2-3. Drive System Cleaning 5
2-4. Periodical Check Items 6
2-5. Servicing Tools 7

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4-6. No.7 Guide (TG-7) Adjustment 31
4-7. Cue and REV Waveform Check 31
4-8. Check After Adjustment 32
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 4-8-2. Rising Check 32
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1. PREPARATIONS FOR MECHANICAL BLOCK CHECK, ADJUSTMENT AND REPLACEMENT

Note: For removal of the cabinet, the boards, the cassette compartment, etc., refer to the service guides.

1-1. OPERATION WITHOUT CASSETTE COMPARTMENT ASSEMBLY AND TAPE

Note: The unit will not work if exposed to a strong light.

1-1-1. How to Trigger the Loading Operation (See Fig. 1-1.)

1) Supply power to the unit after removing the cabinet, the camera block, the cassette compartment assembly, etc., as indicated in the service guides. (This will enable operation of the mechanical deck.)
2) Cover the LED assembly with an opaque cap, etc. ❶.
3) Attach a piece of tape to the RECOG switch ❷ so that the pin is held down.
4) Push the EJECT lever ❸ in the direction of the arrow Ⓐ.

1-1-2. Setting the Playback Mode (See Fig. 1-1.)

1) Follow the procedures in section 1-1-1. above.
2) Put the rubber band ❹ around the S and T reels.
3) Press the PLAY switch of unit, then push the tension regulator arm assembly ❺ in the direction of the arrow Ⓑ when the T reel starts to rotate (the tension regulator band will be released, and the S reel will start rotating).
4) To stop operation, press the STOP switch.

1-1-3. Eject Operation (See Fig. 1-1.)

1) To eject, turn the EJECT switch on.

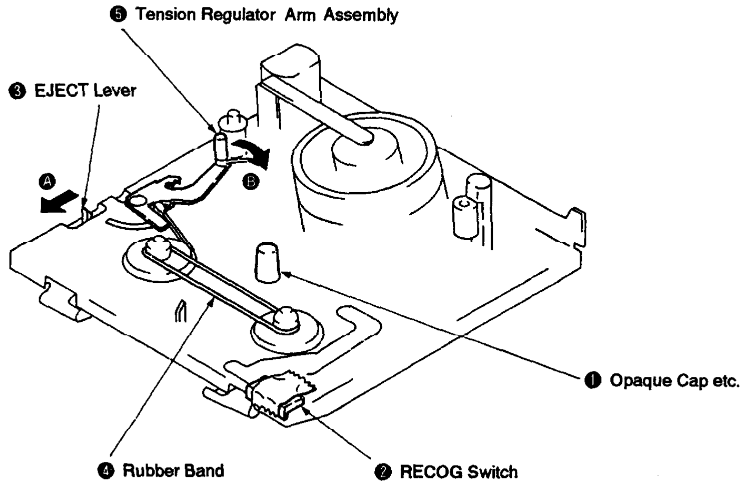
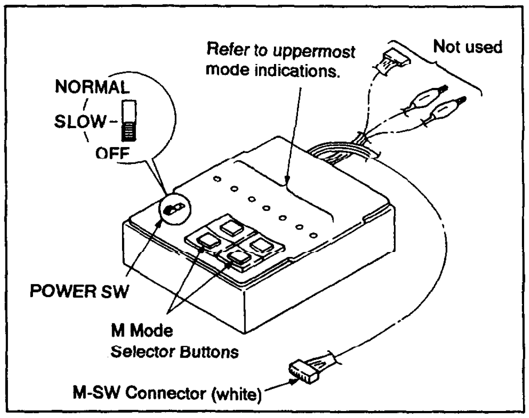


Fig. 1-1.

1-2. THE MODE SELECTOR

1-2-1. Name of Each Part (external) (See Fig. 1-2.)

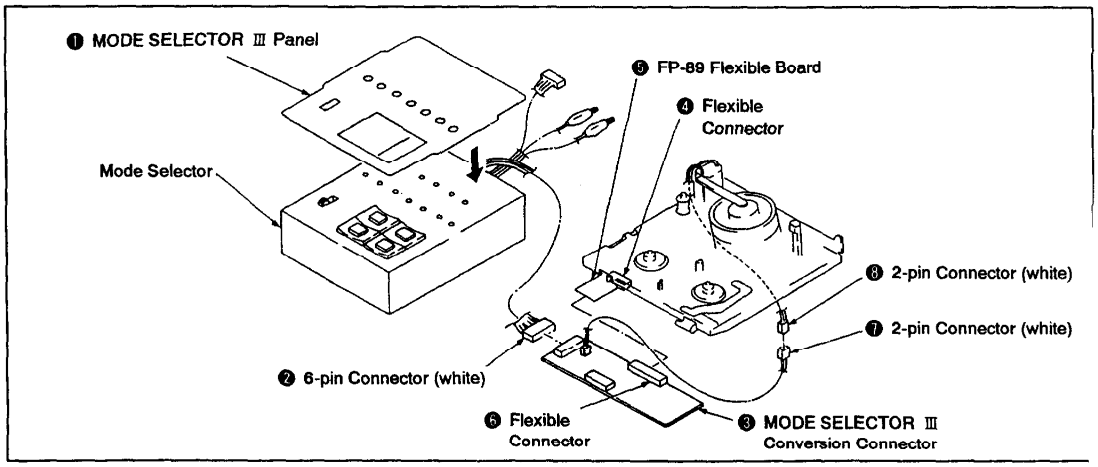


Refer to uppermost mode indications.
Not used
NORMAL
SLOW
OFF
POWER SW
M Mode Selector Buttons
M-SW Connector (white)

Fig. 1-2.

1-2-2. Connections (See Fig. 1-3.)

1) Mount the MODE SELECTOR III panel (Ref. No. J-9) ❶ onto the mode selector.
2) Attach the conversion connector (Ref. No. J-8) ❸ of MODE SELECTOR III to the 6-pin connector (white) ❷ of the mode selector M-SW.
3) Remove the FP-89 flexible board ❺ from the flexible connector ❹.
4) Attach the FP-89 flexible board ❺ to the flexible connector ❻ of the MODE SELECTOR III conversion connector ❸, then attach the 2-pin connector (white) ❽ of the loading motor to the 2-pin connector (white) ❼.



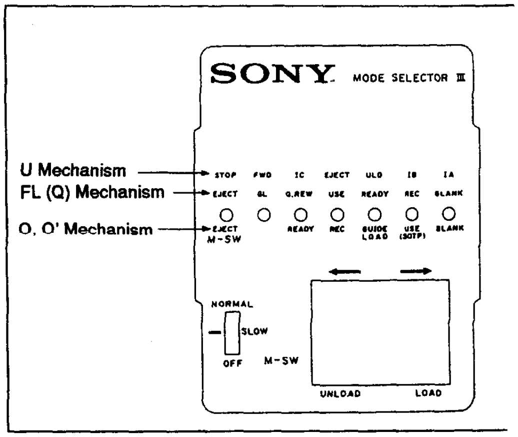
❶ MODE SELECTOR Ⅲ Panel
Mode Selector
❺ FP-89 Flexible Board
❹ Flexible Connector
❽ 2-pin Connector (white)
❼ 2-pin Connector (white)
❷ 6-pin Connector (white)
❻ Flexible Connector
❸ MODE SELECTOR Ⅲ Conversion Connector

Fig. 1-3.

1-2-3. Handling (See Figs. 1-2. and 1-4.)

- Use only the M mode selector buttons.
- Refer to mode indications on the uppermost part of the MODE SELECTOR III panel.
- If the right M mode selector button is kept pressed, the lit indication will change in the order of EJECT → (IA) → ULD → (IB) → STOP → (IC) → FWD.
- To change modes in the reverse direction (from FWD to EJECT), press the left selector button.

Note: For this U mechanism, the uppermost indicators on the MODE SELECTOR III panel are used. The IA, IB and IC indications light up during mode changes.



SONY MODE SELECTOR Ⅲ
U Mechanism
FL (Q) Mechanism
O, O' Mechanism
STOP FWD IC EJECT ULD IB IA
EJECT GL Q.REW USE READY REC BLANK
EJECT M-SW READY REC GUIDE LOAD USE (SOTP) BLANK
NORMAL
SLOW
OFF
M-SW
UNLOAD
LOAD

Fig. 1-4.

2. PERIODICAL CHECK AND MAINTENANCE (See Fig. 2-1.)

The following periodical check and maintenance procedures are necessary to ensure proper operation and to protect the tapes as well as the unit, and the following maintenance procedures must be always carried out after repairing regardless of how long the unit has been used.

2-1. ROTARY DRUM ASSEMBLY CLEANING

1) While pressing a piece of chamois leather (Ref. No. J-2) moistened in cleaning fluid (Ref. No. J-1) lightly against the rotary drum, turn the rotary upper drum slowly counter-clockwise with your fingers.

Note: Do not drive the drum with the motor, and do not turn it clockwise.
Do not move the chamois leather vertically against the head tip; this can damage the head tip. Strictly follow the cleaning instructions above.

2-2. TAPE PATH CLEANING

1) Set the cassette compartment assembly to the eject state, or remove it. Then clean the tape path (guides No. 1 to 7, capstan shaft, pinch rollers) with a piece of chamois leather moistened in cleaning fluid (See Fig. 2-1).

2-3. DRIVE SYSTEM CLEANING

1) Clean the drive system (timing belt, reel table surface) with a piece of cloth moistened in cleaning fluid.

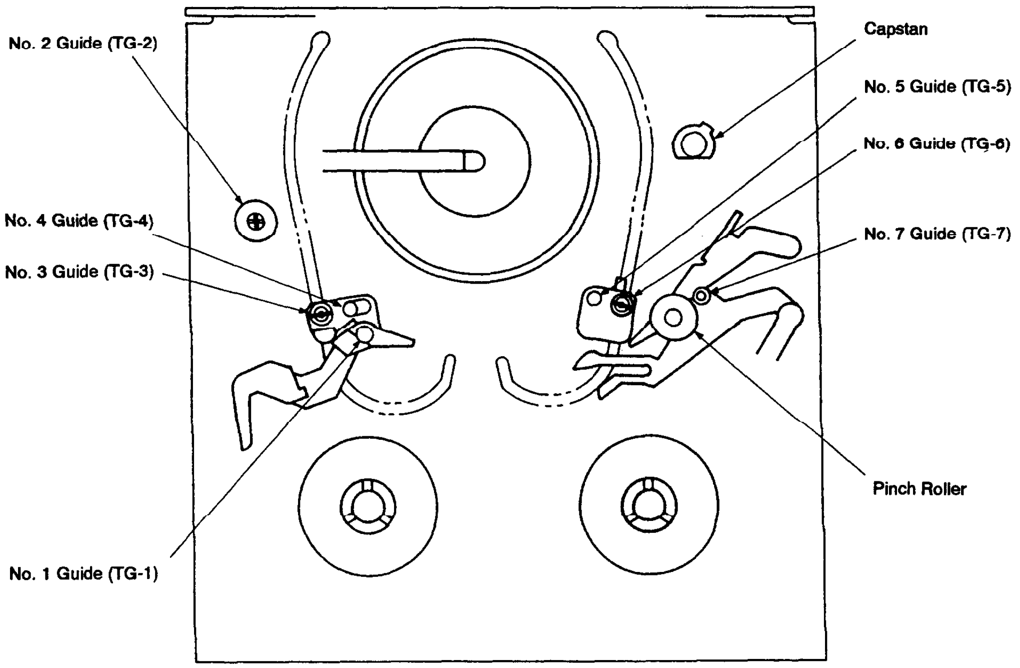


Fig. 2-1.

2-4. PERIODICAL CHECK ITEMS

○Cleaning ◎Lubrication ☆Check

Maintenance and Check Item		Operation time (H)										Remarks
		500	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000	
Cleaning and Demagnetizing	Tape path surfaces Cleaning	○	○	○	○	○	○	○	○	○	○	Do not oil.
	Rotary drum assembly cleaning and demagnetizing	○	○	○	○	○	○	○	○	○	○	Do not oil.
Drive System	Relay belt (short)	–	☆	–	☆	–	☆	–	☆	–	☆	3-728-866-01
	Relay belt (long)	–	☆	–	☆	–	☆	–	☆	–	☆	3-728-865-01
	Capstan shaft	–	◎	–	◎	–	◎	–	◎	–	◎	Take care that no oil gets on tape path surfaces.
	Idler pulley axle	–	◎	–	◎	–	◎	–	◎	–	◎	
	Loading motor	–	☆	–	☆	–	☆	–	☆	–	☆	1-541-612-11
Performance Check	Abnormal noise	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	
	Back tension measurement	–	☆	–	☆	–	☆	–	☆	–	☆	
	Brake system	–	☆	–	☆	–	☆	–	☆	–	☆	
	FWD, RVS torque measurement	–	☆	–	☆	–	☆	–	☆	–	☆	

Notes: When overhauling the unit, perform parts replacement referring to the table above.

Regarding Oil:

- Always use the specified oil (using oil of different viscosity, etc. can cause troubles of several kinds).
  Specified oil: Part No. 7-661-018-01
  (Mitsubishi Diamond Oil Hydrofluid EP56)
- Be sure that no dirt is mixed in the oil to be used on axle bearings. Use of dirty oil can result in bearing wear and burning.
- By "one drop of oil" is meant the quantity of oil adhering to the end of a a 2mm-diameter rod as shown in Fig. 2-2.

On grease:

- Use the specified grease.
  Grease: Part No. 7-662-010-08
  (Sony grease SGL-701)

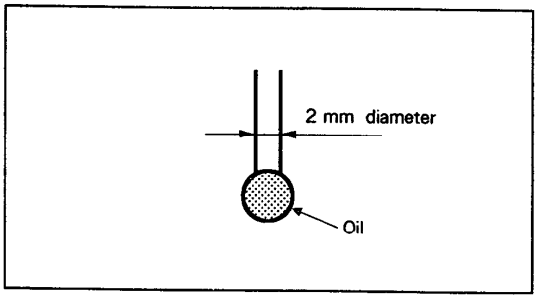


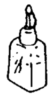
Fig. 2-2.

2-5. SERVICING TOOLS

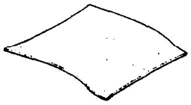
Ref. No.	Name	Part Code	Marking	Application, etc.
J-1	Cleaning fluid	Y-2031-001-0	–	
J-2	Chamois cloth	2-034-697-00	–	
J-3	Head demagnetizer	Commercially available	–	
J-4	Dental mirror Spare mirror	J-6080-029-A J-6080-030-1	SL-5052	Tape path
J-5	Alignment tape NTSC (WR5-1N) PAL (WR5-1C)	8-967-995-01 8-967-995-06		Tape path
J-6	FWD/RVS takeup torque cassette	J-6080-624-A	GD-2086	
J-7	Rotary drum jig	(Attached to the maintenance rotary upper drum)		
J-8	Mode selector III conversion connector	J-6082-021-A		General
J-9	Mode selector III panel	J-6082-023-A		General
J-10	Mode selector	J-6080-825-A		General
J-11	Hexagonal wrench detection (0.89 mm) or L wrench (0.89 mm)	7-700-766-01 7-700-736-06		Tape path
J-12	Sony grease (SGL-701)	7-662-010-08		

Other devices: Oscilloscope
Analog tester (20 kΩ)

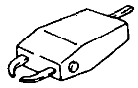
J-1



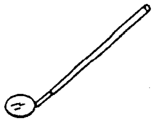
J-2



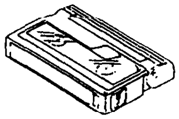
J-3



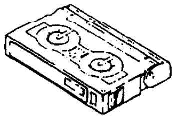
J-4



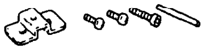
J-5



J-6

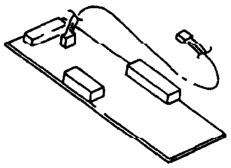


J-7

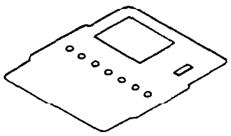


(Attached to the maintenance rotary upper drum)

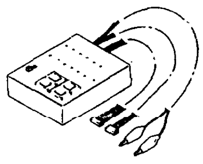
J-8



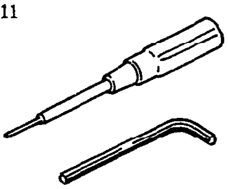
J-9



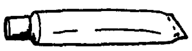
J-10



J-11



J-12



3. MECHANICAL BLOCK CHECK, ADJUSTMENT AND REPLACEMENT

Notes:
- Use the mode selector (Ref. No. J-10) for procedures in this chapter.
- Modes within a frame ☐ are those set by pressing the buttons of the mode selector.

3-1. HC ROLLER ASSEMBLY

1. Removal (See Fig. 3-1.)

1) Remove the screw ❶, then remove the HC roller assembly ❷.

2. Installation (See Fig. 3-1.)

1) Align the two dowels ❸ attached to the HC roller assembly ❷ with the two holes ❹ in the mechanism chassis.
2) Secure the HC roller assembly ❷ with the screw ❶.

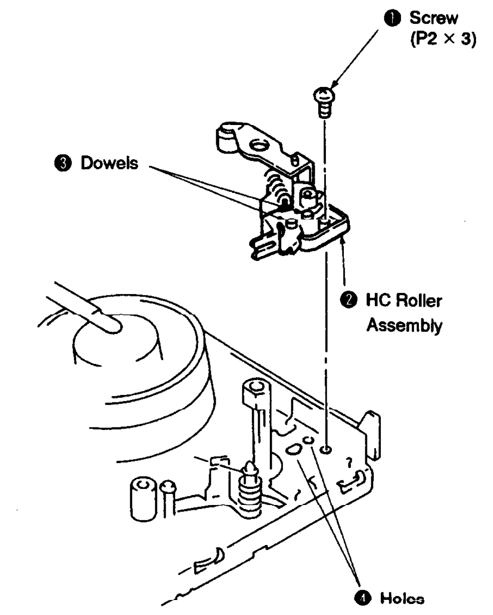

❶ Screw (P2 × 3)
❸ Dowels
❷ HC Roller Assembly
❹ Holes

Fig. 3-1.

3-2. GUIDE GUARD ASSEMBLY

1. Removal (See Fig. 3-2.)

Remove the screw ❶, then remove the guide guard assembly ❷.

2. Installation (See Fig. 3-2.)

1) Align the dowel ❸ attached to the guide guard assembly ❷ with the hole ❹.
2) Secure the guide guard assembly ❷ with the screw ❶.

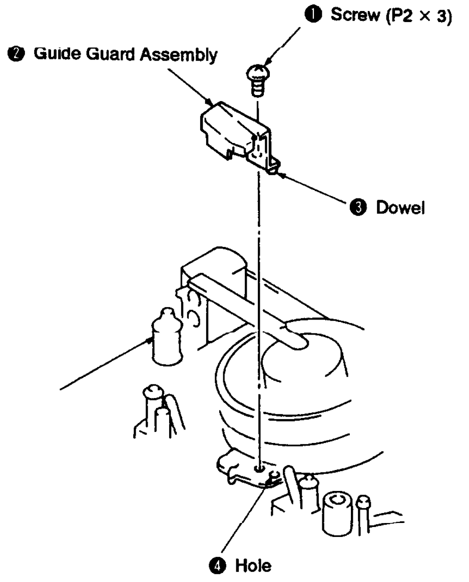

❶ Screw (P2 × 3)
❷ Guide Guard Assembly
❸ Dowel
❹ Hole

Fig. 3-2.

3-3. DC MOTOR (CAPSTAN MOTOR) ASSEMBLY

1. Removal (See Fig. 3-3.)

1) Set the ULD mode.
2) Turn the stopper ❶ in the direction of the arrow 🅐 as far as it will go.
3) Remove the two screws ❷, then remove the DC motor ❸.

2. Installation (See Fig. 3-3.)

1) Align the two screwed dowels ❹ with the two holes ❺, then engage the toothed part ❻ with the connecting gear ❼.
2) Secure the DC motor assembly ❸ with the two screws ❷.
3) Turn the stopper ❶ in the direction of the arrow 🅑 as far as it will go.

Note:
- When engaging the gears, take care not to damage their teeth.
- Do not leave any clearance between the DC motor ❸ and the chassis.
- Do not touch the capstan motor axle*, the oil seal* and the rotor*.

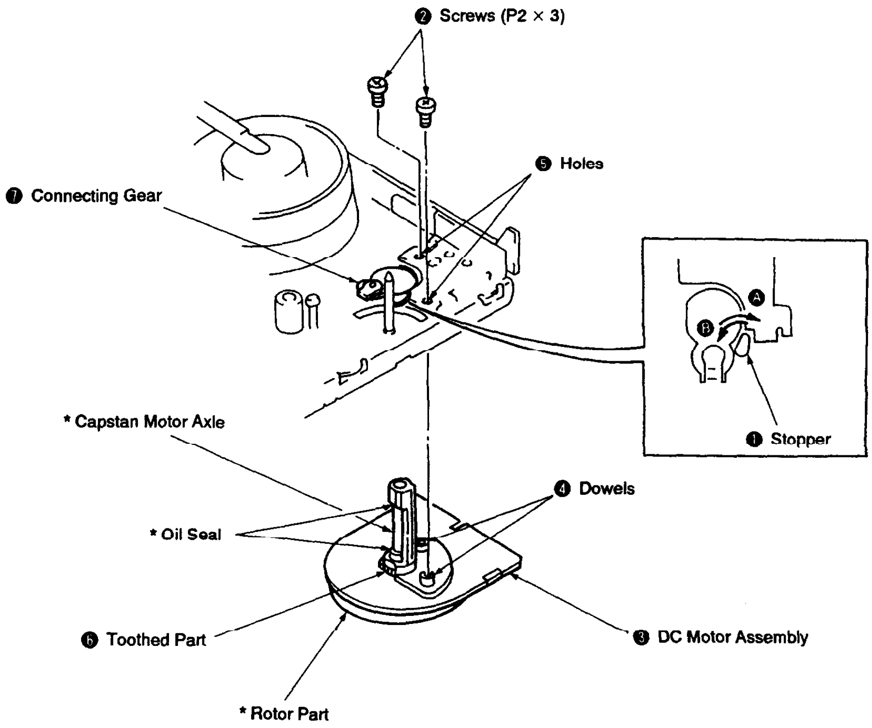

❷ Screws (P2 × 3)
❺ Holes
❼ Connecting Gear
🅐
🅑
❶ Stopper
* Capstan Motor Axle
❹ Dowels
* Oil Seal
❻ Toothed Part
❸ DC Motor Assembly
* Rotor Part

Fig. 3-3.

3-4. S BRAKE, T BRAKE

1. Removal (See Fig. 3-4.)

1) Remove the torsion coil spring (ST) ❶.
2) Remove the axle holding pin ❷, then remove the T brake ❸.
3) Remove the axle holding pin ❹, then remove the S brake ❺.

2. Installation (See Fig. 3-4.)

1) While fitting the toothed part ❻ into the notch ❼, mount the S brake ❺.
2) Insert the axle holding pin ❹.
3) Insert the axle ❽ to the S reel side of the brake release arm ❾ so that the Ⓐ part comes closer to the drum than part Ⓑ, and mount the T brake ❸.
4) Insert the axle holding pin ❷.
5) Insert the torsion coil spring (ST) ❶ below the claw ⓫ of the axle ❿, then hook it to two claws ⓬.

Note: Confirm that the claws of axle holding pins ❷ and ❹ are not broken before assembling.

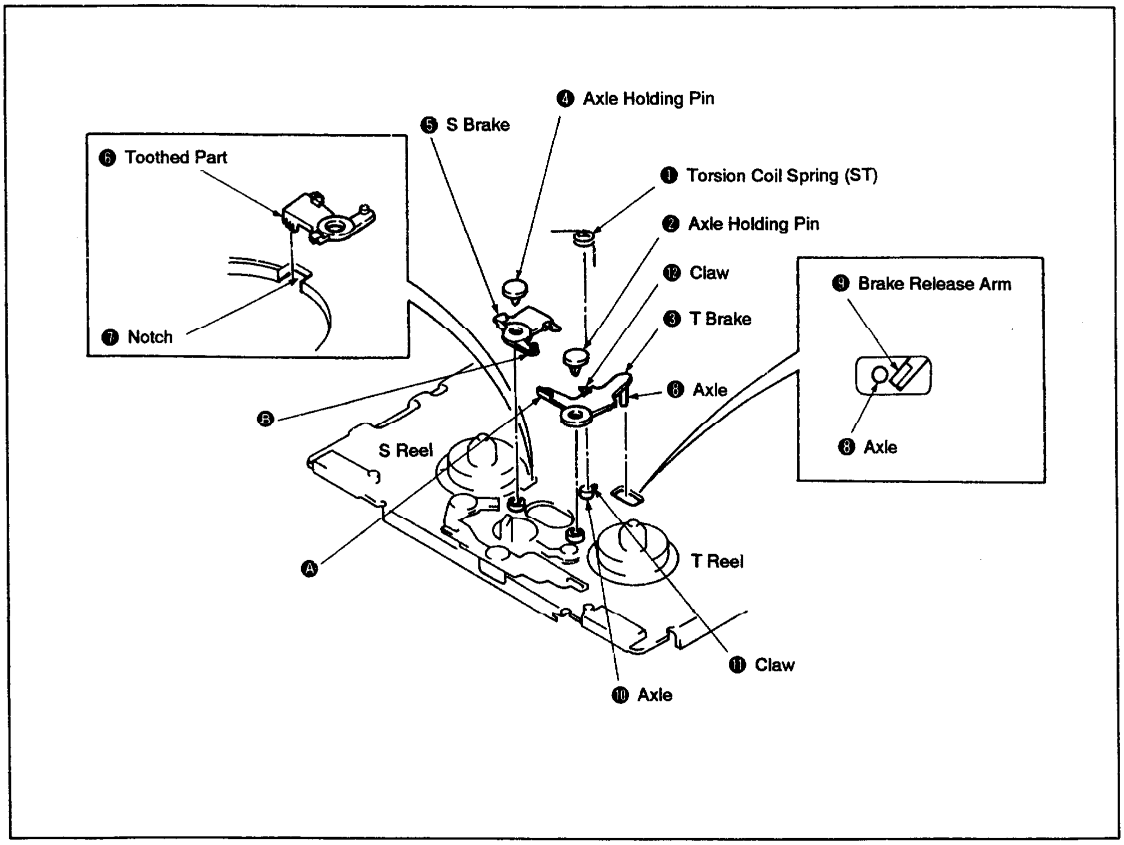

❹ Axle Holding Pin
❺ S Brake
❻ Toothed Part
❼ Notch
❶ Torsion Coil Spring (ST)
❷ Axle Holding Pin
⓬ Claw
❸ T Brake
❾ Brake Release Arm
❽ Axle
❽ Axle
Ⓑ
S Reel
Ⓐ
T Reel
⓫ Claw
❿ Axle

Fig. 3-4.

3-5. LB BRAKE, AXLE HOLDING PINS

1. Removal (See Fig. 3-5.)

1) Remove the screw ❶, then remove the TL holding plate ❷.
2) Remove the axle holding pin ❸, then remove the LB brake ❹.
3) Remove the axle holding pin ❺, then remove the LB lever ❻.

2. Installation (See Fig. 3-5.)

1) Mount the LB lever ❻ matching it to pin ❼ of the LB gear, then secure it with the axle holding pin ❺.
2) Insert the pin ❽ into the notch ❾ of the LB lever ❻, then mount the LB brake ❹ while inserting the toothed part ❿ into the notch ⓫.
3) Insert the axle holding pin ❸.
4) Align the dowel ⓬ with the hole ⓭, then mount the TL holding plate and secure it with the screw ❶.

Note: Confirm that the claws of axle holding pins ❸ and ❺ are not broken before assembling.

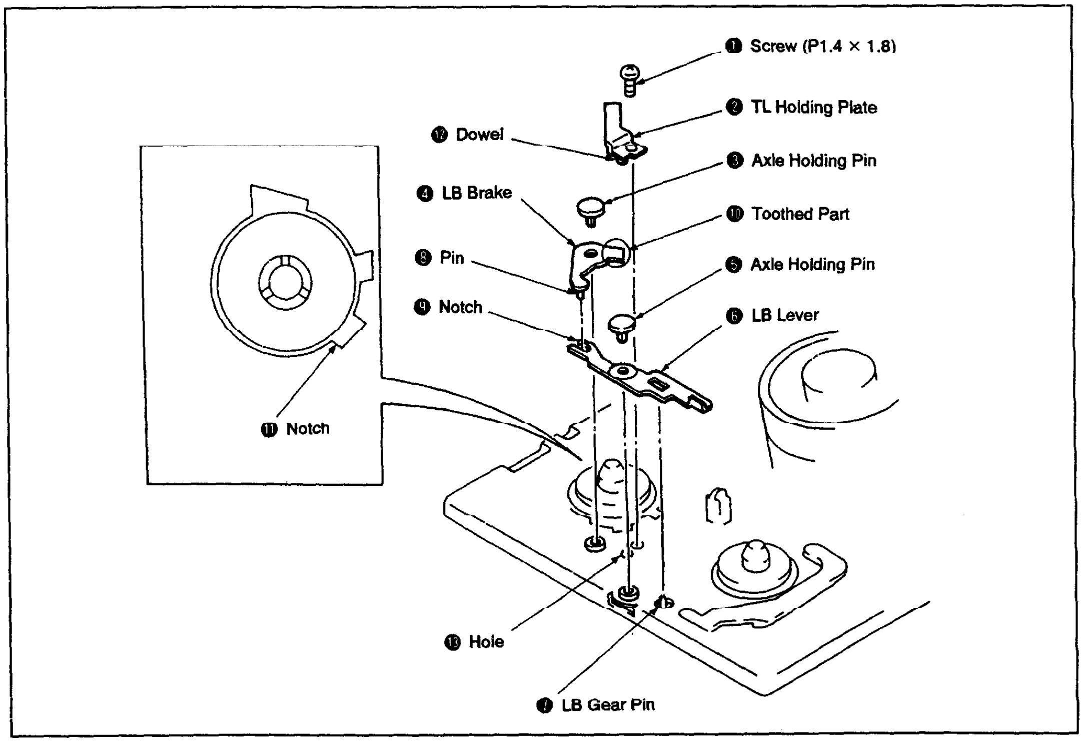

❶ Screw (P1.4 × 1.8)
⓬ Dowel
❷ TL Holding Plate
❸ Axle Holding Pin
❹ LB Brake
❿ Toothed Part
❽ Pin
❺ Axle Holding Pin
❾ Notch
❻ LB Lever
⓫ Notch
⓭ Hole
❼ LB Gear Pin

Fig. 3-5.

3-6. LB RELEASE ARM

1. Removal (See Fig. 3-6.)

1) While pushing the claw ❶ in the direction of the arrow, remove the LB release arm ❷.

2. Installation (See Fig. 3-6.)

1) Fit the LB release arm ❷ to the axle ❸, insert protrusions ⓐ, ⓑ, ⓒ, ⓓ into the three holes ❹, then secure with the claw ❶.

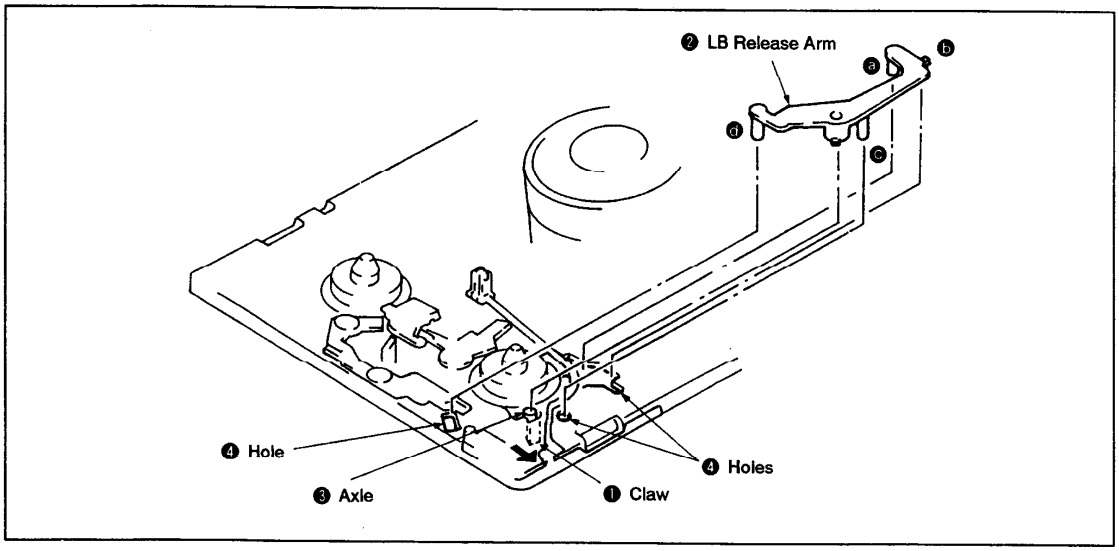

❷ LB Release Arm
ⓐ
ⓑ
ⓓ
ⓒ
❹ Hole
❸ Axle
❶ Claw
❹ Holes

Fig. 3-6.

3-7. RK STOPPER, RK STOPPER ARMS

1. Removal (See Fig, 3-7.)

1) Remove the torsion coil spring (RK) ❶.
2) Open the chassis claw ❷, then remove the RK stopper arm ❸.
3) Remove the RK stopper ❹.

2. Installation (See Fig. 3-7.)

1) Mount the RK stopper ❹ onto the axle ❺.
2) Mount the RK stopper arm ❸ onto the axle ❻, insert Pin ❿ into hole ⓫, then hook the claw ❷ of the chassis to the hole ❼.
3) Insert the torsion coil spring (RK) ❶ into the axle ❺, then hook it to claws ❽ and ❾.

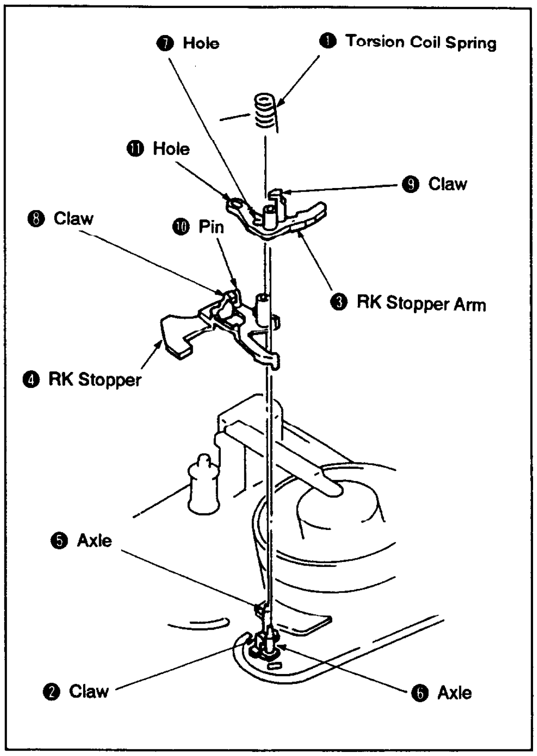

❼ Hole
❶ Torsion Coil Spring
⓫ Hole
❾ Claw
❽ Claw
❿ Pin
❸ RK Stopper Arm
❹ RK Stopper
❺ Axle
❷ Claw
❻ Axle

Fig. 3-7.

3-8. PINCH ARM ASSEMBLY, TG-7 ASSEMBLY

1. Removal (See Fig. 3-8.)

1) Set the $\boxed{\text{IB}}$ mode.
2) Remove the stopper washer ❶, then remove the pinch arm assembly ❷.
3) Bend the claw ❹ inside hole ❸ in the direction of the arrow using a thin screwdriver or the like, then remove the TG-7 plate spring ❺.
4) Remove the TG-7 arm assembly ❻.

2. Installation (See Fig. 3-8.)

1) Grease the inner surfaces of hole ❼ (See Fig. A).
2) Insert the axle ❽ of the TG-7 arm assembly ❻ into the hole ❼.
3) Grease the shaded section ⓐ (See Fig. A).
4) Insert the TG-7 plate spring ❺ into the hole ❸, then secure it with the claw ❹.
5) Apply half a drop of oil to the axle ❾ (See Fig. B).
6) Fit the pinch arm assembly ❷ to the axle ❾ and insert the pinch roller sub arm assembly tab ❿ into the ⓑ part.
7) Install the stopper washer ❶.

Note:
- Take care not to grease the screw ⓫ of the TG-7 arm assembly ❻ (See Fig. A).
- When fitting the pinch arm assembly ❷ to the axle ❾, make sure that it does not touch the TG-7 guide ⓬ or the rubber roller ⓭.
- After assembling, be sure to perform tape path adjustment as described in section 4.

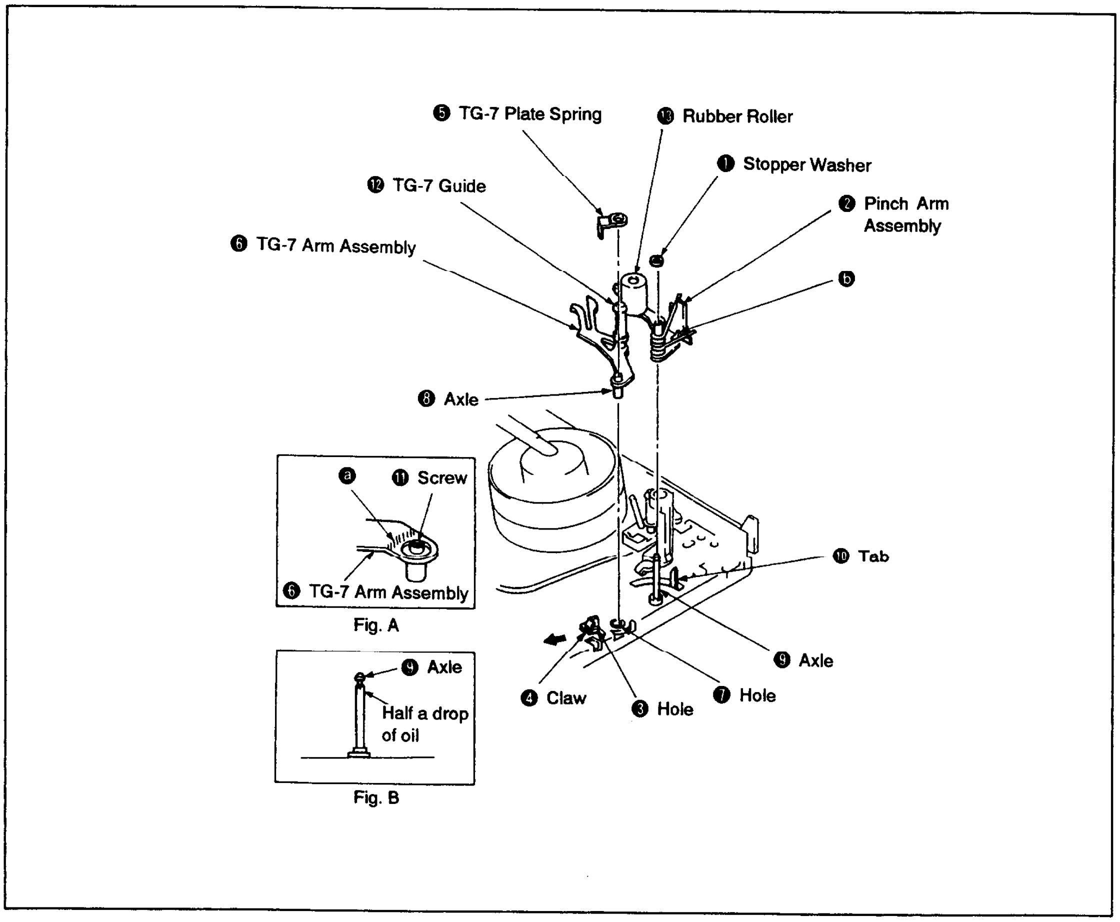

❺ TG-7 Plate Spring
⓭ Rubber Roller
❶ Stopper Washer
⓬ TG-7 Guide
❷ Pinch Arm Assembly
❻ TG-7 Arm Assembly
ⓑ
❽ Axle
ⓐ
⓫ Screw
❻ TG-7 Arm Assembly
Fig. A
❿ Tab
❾ Axle
Half a drop of oil
Fig. B
❾ Axle
❹ Claw
❸ Hole
❼ Hole

Fig. 3-8.

3-9. TG-2 ASSEMBLY

1. Removal (See Fig. 3-9.)

1) Remove the TG-2 upper flange assembly ❶.
2) Remove the TG-2 roller ❷, the TG-2 sleeve ❸, the TG-2 lower flange ❹ and the compression spring ❺.

2. Installation (See Fig. 3-9.)

1) Mount the compression spring ❺, the TG-2 lower flange ❹, the TG-2 sleeve ❸ and the TG-2 roller ❷ to the axle.
2) Secure the TG-2 upper flange ❶ to the axle by rotating it 4 to 6 turns.

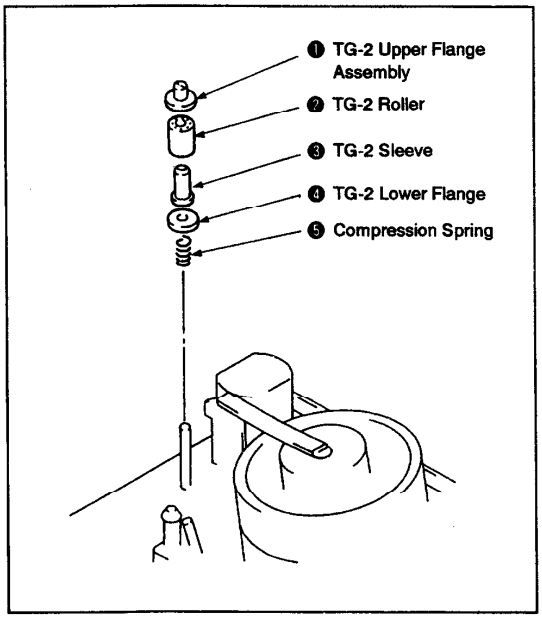

❶ TG-2 Upper Flange Assembly
❷ TG-2 Roller
❸ TG-2 Sleeve
❹ TG-2 Lower Flange
❺ Compression Spring

Fig. 3-9.

3. TG-2 Height Preset (see Fig. 3-10.)

1) Adjust height from the mechanism chassis upper surface to the TG-2 upper flange ❶ upper surface to 18.6 mm by turning the TG-2 upper flange ❶.

Note: After adjustment, be sure to perform tape path adjustment as described in section 4.

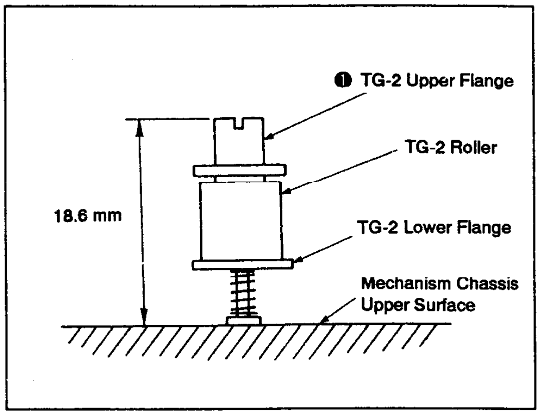

❶ TG-2 Upper Flange
TG-2 Roller
18.6 mm
TG-2 Lower Flange
Mechanism Chassis Upper Surface

Fig. 3-10.

3-10. S REEL TABLE ASSEMBLY, T REEL TABLE ASSEMBLY

1. Removal (See Fig. 3-11.)

1) Remove the S brake and T brake as described in section 3-4.
2) Remove the TL holding plate as described in section 3-5.
3) Remove the tension regulator band assembly as described in section 3-11.
4) Remove the S reel table assembly ❶.
5) Turn the stopper ❷ approx. 90 ° in the direction of the arrow 🅐.
6) While sliding the LB release arm ❸ in the direction of the arrow 🅑, remove the T reel table assembly ❹.

2. Installation (See Fig. 3-11.)

1) Apply half a drop of oil to the axle ❺ (See Fig. A).
2) Move the RK gear ❻ in the direction of the arrow 🅒 and the TS brake ❼ in the direction of the arrow 🅓, putting them out of the way.
3) While sliding the LB release arm ❸ in the direction of the arrow 🅑, mount the T reel table assembly ❹ onto the axle ❺, then turn the stopper ❷ in the direction of the arrow 🅔 as far as it will go.
4) Apply half a drop of oil to the axle ❽ (See Fig. B).
5) Move the RK gear ❻ in the direction of the arrow 🅕, the UL brake ❾ in the direction of the arrow 🅖 and the LB brake ❿ in the direction of the arrow 🅗, putting them out of the way.
6) Mount the S reel table ❶ onto the axle ❽.
7) Mount the tension regulator band assembly as described in section 3-11.
8) Mount the TL holding plate as described in section 3-5.
9) Mount the S brake and T brake assemblies as described in section 3-4.

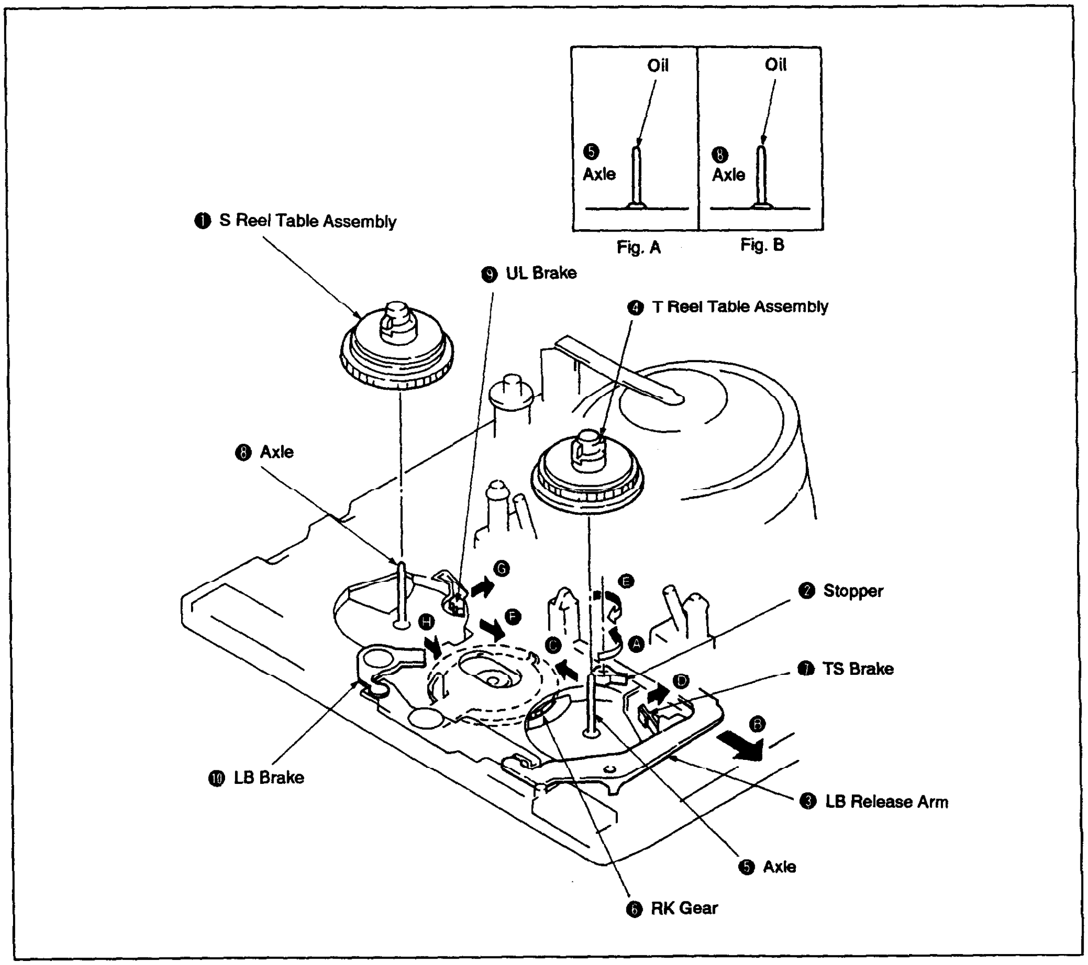

Oil
❺ Axle
Fig. A
Oil
❽ Axle
Fig. B
❶ S Reel Table Assembly
❾ UL Brake
❹ T Reel Table Assembly
❽ Axle
🅖
🅕
🅗
🅒
🅔
🅐
🅓
❷ Stopper
❼ TS Brake
🅑
❿ LB Brake
❸ LB Release Arm
❺ Axle
❻ RK Gear

Fig. 3-11.

3-11. TENSION REGULATOR BAND ASSEMBLY, TENSION REGULATOR ARM ASSEMBLY

1. Removal (See Fig. 3-12.)

1) Remove the TL holding plate as described in section 3-5.
2) Remove the screw ❶.
3) Using a thin screwdriver or the like, remove the tension regulator band assembly ❹ from the axle ❸ of tension regulator arm assembly ❷.
4) Remove the tension spring ❺.
5) Remove the stopper washer ❻ from the back of the mechanism chassis, then remove the tension regulator arm assembly ❷.
6) Open the claw ❼, then remove the adjust arm ❽.

Note: When removing the tension regulator band assembly ❹, take care not to twist or bend it, and not to touch the felt surface ❾.

2. Installation (See Fig. 3-12.)

1) Engage the adjust arm ❽ in the position shown in Fig. A, then close the claw ❼.
2) Apply half a drop of oil to the hole ❿.
3) Mount the tension regulator arm assembly ❷, then insert it into the slot ⓫ so that the ⓐ part comes to the arrow Ⓐ side of the switch lever assembly (See Fig. B).
4) While holding the tension regulator arm assembly ❷ from the mechanism chassis front, secure it with the stopper washer ❻ from the back.
5) Hook the R hook of the tension spring ❻ to the adjust arm ❽ as shown in the figure, then hook the opposite end to the tension regulator arm assembly ❷.
6) Mount the tension regulator band assembly ❹ onto the axle ❸ of tension regulator arm assembly ❷, and place it so that the felt surface ❾ comes against the shaded portion of the S reel table assembly ⓬.
7) Mount the tension regulator plate ⓭ of the tension regulator band assembly ❹ so that it is aligned with the dowel ⓮ of the mechanism chassis, then secure it temporarily with the screw ❶.
8) Mount the TL holding plate as described in section 3-5.
9) Adjust tension regulator FWD position as described in section 3-12.
10) Perform adjust arm adjustment as described in section 3-22.

Note: When mounting the tension regulator band assembly ❷, take care not to twist or bend it, and not to touch the felt surface ❾.

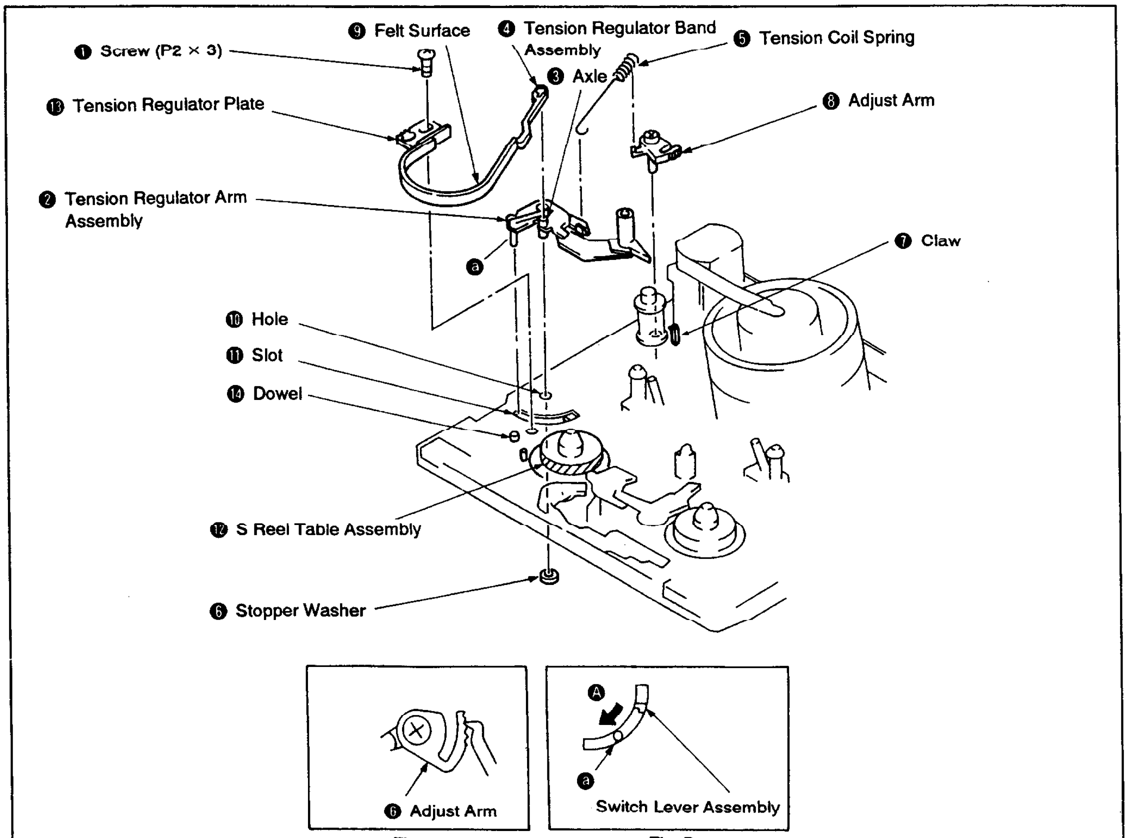

❾ Felt Surface
❹ Tension Regulator Band Assembly
❶ Screw (P2 × 3)
❺ Tension Coil Spring
❸ Axle
⓭ Tension Regulator Plate
❽ Adjust Arm
❷ Tension Regulator Arm Assembly
ⓐ
❼ Claw
❿ Hole
⓫ Slot
⓮ Dowel
⓬ S Reel Table Assembly
❻ Stopper Washer
❻ Adjust Arm
Ⓐ
ⓐ
Switch Lever Assembly

Fig. A

Fig. B

Fig. 3-12.

3-12. TENSION REGULATOR FWD POSITION PRESET (See Fig. 3-13.)

1) Load a cassette tape and set the FWD mode.
2) Confirm whether the distance between ⓐ part of the tension regulator arm ❶ and the groove ❷ of the chassis is 1.1 ± 0.3 mm. If this distance is not within the specified range, remove the cassette tape and perform the following adjustment.
3) Loosen the fixing screw ❹ of the tension regulator band assembly ❸.
4) Slide the tension regulator plate ❺ in the direction of the arrow Ⓐ if the measured distance is over the specified range, and in the direction of the arrow Ⓑ if it is under that range. Then, fix it with the screw ❹.
5) Repeat steps 1) and 2) and confirm that the distance is within the specified range.

Note: Use a cassette with the tape advanced halfway.

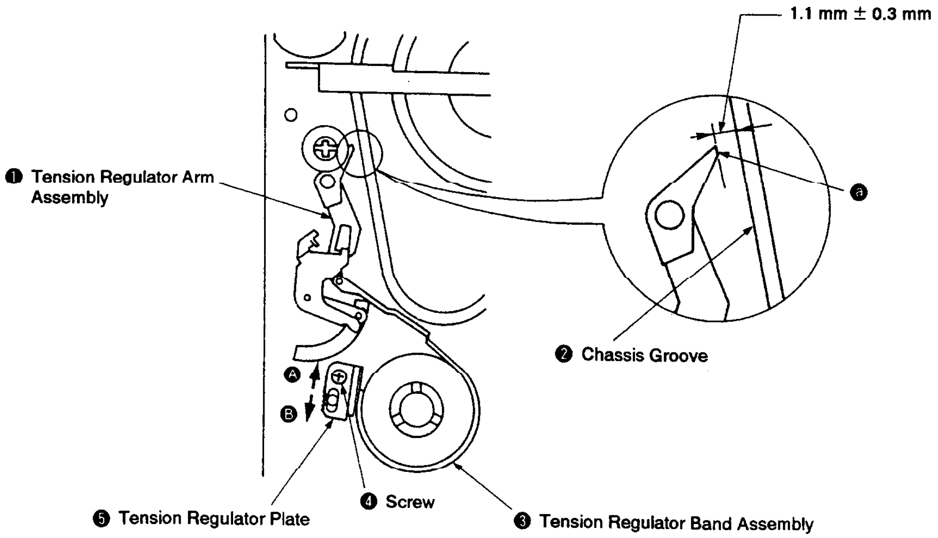

1.1 mm ± 0.3 mm
❶ Tension Regulator Arm Assembly
ⓐ
❷ Chassis Groove
Ⓐ
Ⓑ
❹ Screw
❺ Tension Regulator Plate
❸ Tension Regulator Band Assembly

Fig. 3-13.

3-13. DRUM ASSEMBLY, DEW SENSOR

1. Removal (See Fig. 3-14.)

1) Set the EJECT mode.
2) Remove the flexible board ❶ and the two connectors ❷.
3) Remove the guide guard assembly as described in section 3-2.
4) Remove the screw ❸, then remove the axle ground terminal ❹.
5) Remove the three screws ❺, then remove the drum assembly ❻ from the mechanism chassis.
6) Remove the connector ❿
7) Remove the screw ❼, then remove the dew sensor ❽.

Note:
- When removing the drum assembly ❻ from the mechanism chassis, take care not to cut the flexible board ❶ or the harness.
- Take care not to touch the head tip ❾.

2. Installation (See Fig. 3-14.)

1) Insert part ⓐ of the dew sensor ❽ into the notch ⓫ of the mechanism chassis, then secure it with the screw ❼.
2) Mount the connector ❿.
3) Clamp the harness ⓯ of the dew sensor ❽ with the reinforcing the claw ⓰ of the plate SS assembly (See Fig. A).
4) Insert the connector ❷ and the flexible board ❶ into the hole ⓬ of the mechanism chassis, align the drum assembly ❻ with the two dowels ⓭ and secure it with the three screws ❺.
5) Align the axle ground terminal ❷ with the two dowels ⓮ of the mechanism chassis and secure it with the screw ❸.
6) Mount the guide guard assembly as described in section 3-2.
7) Mount the two connectors ❷ and the flexible board ❶.

Note:
- Take care not to cut the flexible board ❶ or the harness ⓯.
- Take care not to touch the head tip ❾.
- After assembling, be sure to perform Tape Path Adjustment following instructions in section 4.

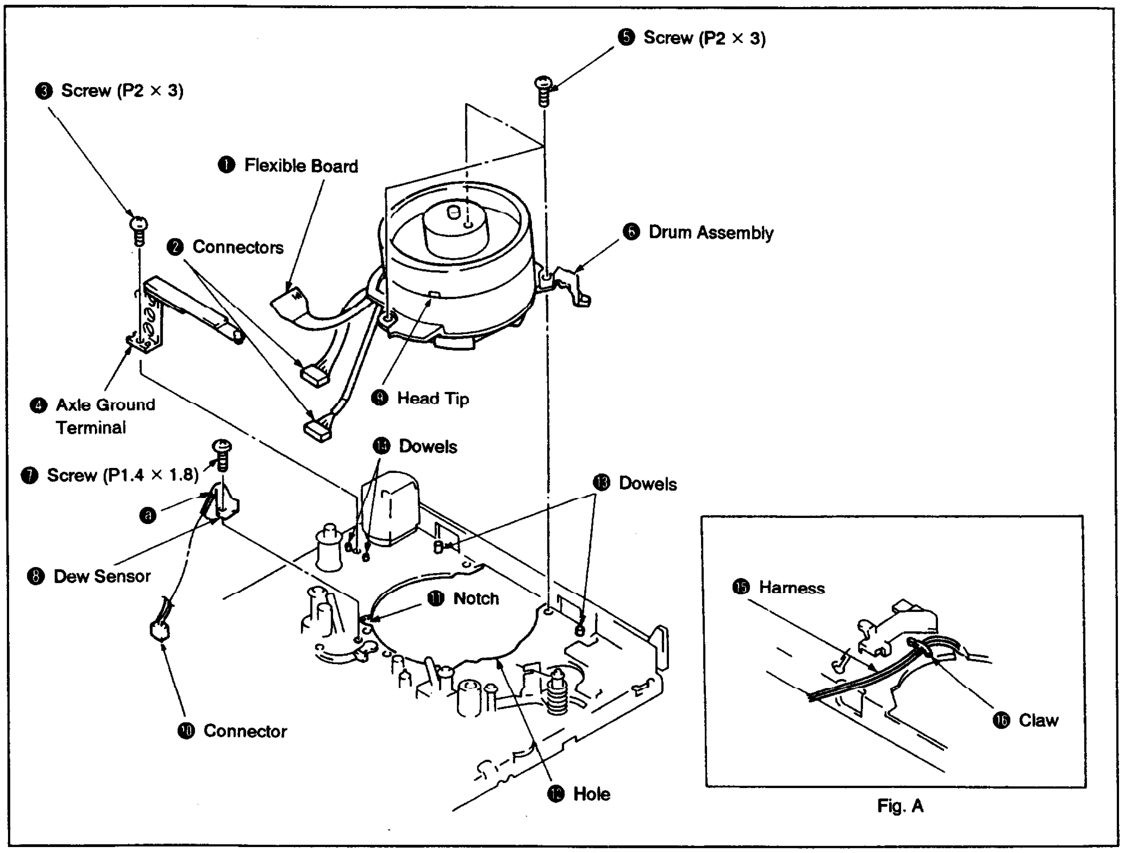

❺ Screw (P2 × 3)
❸ Screw (P2 × 3)
❶ Flexible Board
❷ Connectors
❻ Drum Assembly
❹ Axle Ground Terminal
❾ Head Tip
⓮ Dowels
❼ Screw (P1.4 × 1.8)
ⓐ
⓭ Dowels
❽ Dew Sensor
⓫ Notch
⓯ Harness
❿ Connector
⓰ Claw
⓬ Hole
Fig. A

Fig. 3-14.

3-14. EJECT LEVER, SWITCH LEVER ASSEMBLY, PINCH ROLLER SUB ARM ASSEMBLY

1. Removal (See Fig. 3-15.)

1) Remove the DC motor (capstan motor) as described in section 3-3.
2) Set the STOP mode.
3) Remove the claw ❶, then remove the eject lever ❷.
4) Remove the stopper washer ❸, then remove the switch lever assembly ❹.
5) Remove the pinch roller load spring ❺.
6) Remove the stopper washer ❻, then remove the pinch roller sub arm assembly ❼.

2. Installation (See Fig. 3-15.)

1) Grease the axle ❽ (See Fig. A).
2) Assemble by inserting ⓐ part of the pinch roller sub arm assembly ❼ into the slot ❾, then insert the pin ❿ into the loading lever assembly notch ⓫.
3) Secure with the stopper washer ❻.
4) Mount the pinch roller load spring ❺ by catching its ⓑ end between the claw ⓬ and the chassis side and its ⓒ end to the claw ⓬.
5) Apply half a drop of oil to the axle ⓭ (See Fig. B).
6) Align the groove ⓮ of the switch lever assembly ❹ with the mode detector switch protrusion ⓯, mount it on the axle ⓭, then insert the pin ⓰ into the drive gear (left) assembly ⓱ outer groove.
7) Secure with the stopper washer ❸.
8) Mount the eject lever ❷ and close the claw ❶.
9) Mount the DC motor (capstan motor) as described in section 3-3.

Note: When mounting the switch lever assembly ❹ onto the axle ⓭ with the tension regulator arm assembly installed, set the pin ⓰ to the arrow Ⓐ side of the switch lever assembly ❹.

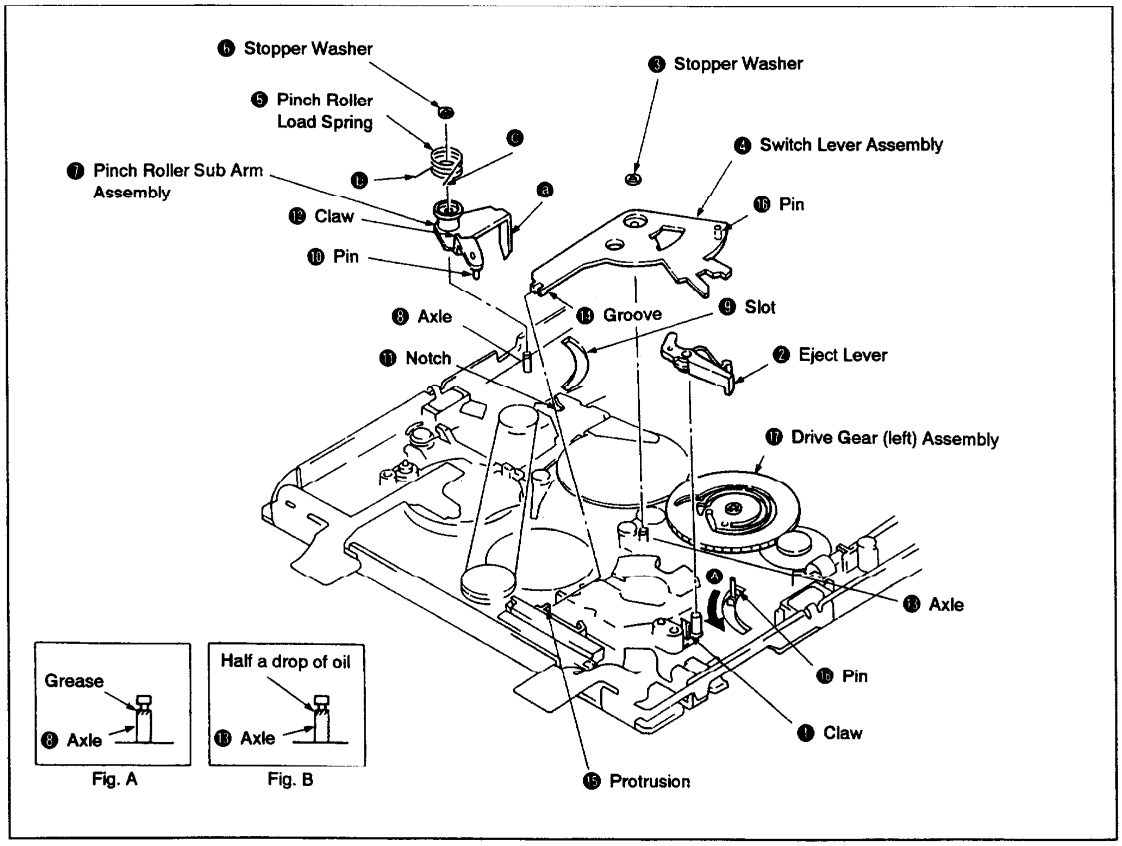

❻ Stopper Washer
❺ Pinch Roller Load Spring
ⓒ
❼ Pinch Roller Sub Arm Assembly
ⓑ
ⓐ
⓬ Claw
❿ Pin
❽ Axle
⓫ Notch
❸ Stopper Washer
❹ Switch Lever Assembly
⓰ Pin
⓮ Groove
❾ Slot
❷ Eject Lever
⓱ Drive Gear (left) Assembly
Ⓐ
⓭ Axle
⓰ Pin
❶ Claw
⓯ Protrusion
Grease
❽ Axle
Half a drop of oil
⓭ Axle

Fig. A

Fig. B

Fig. 3-15.

3-15. TIMING BELT (L) , RC GEAR ASSEMBLY, LOADING LEVER ASSEMBLY, TIMING BELT (S), CONNECTING GEAR ASSEMBLY

1. Removal (See Fig. 3-16.)

1) Remove the DC motor (capstan motor) as described in section 3-3.
2) Remove the pinch roller sub arm assembly as described in section 3-14.
3) Set the STOP mode.
4) Remove the stopper washer ❶ , then remove the RC gear assembly ❷ from the axle ❹ with the timing belt (L) ❸ attached.
5) Remove the timing belt (L) ❸ from the idler pulley assembly ❺ .
6) Remove the stopper washer ❻ and remove the loading lever assembly ❽ while pushing the claw ❼ in the direction of the arrow Ⓐ .
7) Turn the stopper ❾ approx. 90 ° in the direction of the arrow Ⓑ .
8) Remove the connecting gear assembly ⓫ from the axle ⓰ with the timing belt (S) ❿ attached.
9) Remove the timing belt (S) ❿ from the idler pulley assembly ❺ .

Note: When removing the connecting gear ⓫ , take care not touch the flange section ⓑ .

2. Installation (See Fig. 3-16.)

1) Apply half a drop of oil to the axle ⓰ (See Fig. F).
2) Hook one end of the timing belt (S) ❿ onto the connecting gear assembly ⓫ and the other end onto gear ⓓ of the idler pulley assembly ❺ . (Refer to the figure.)
3) Mount the connecting gear assembly ⓫ with the timing belt (S) ❿ attached to the axle ⓰ .
4) Turn the stopper ❾ in the direction of the arrow Ⓒ as far as it will go.
5) Apply half a drop of oil to the axle ⓬ (See Fig. A).
6) Fit the loading lever assembly ❽ to the axle ⓬ , secure the ⓐ part with the claw ❼ and place the pin ⓭ into the groove of the drive gear (right) assembly ⓮ .
7) Install the stopper washer ❻ .
8) Place the timing belt (L) ❸ around the gears of the RC gear assembly ❷ indicated in Fig. B, and its opposite side around the gear ⓒ of the idler pulley assembly ❺ . (See Fig. E.)
9) Mount the RC gear assembly ❷ onto the axle ❹ with the timing belt (L) ❸ attached, and engage it with the gear of the RK gear assembly ⓯ .
10) Install the stopper washer ❶ .
11) Grease parts of the loading lever assembly ❽ indicated in Fig. C.
12) Mount the pinch roller sub arm assembly as described in section 3-14.
13) Mount the DC motor (capstan motor) as described in section 3-3.

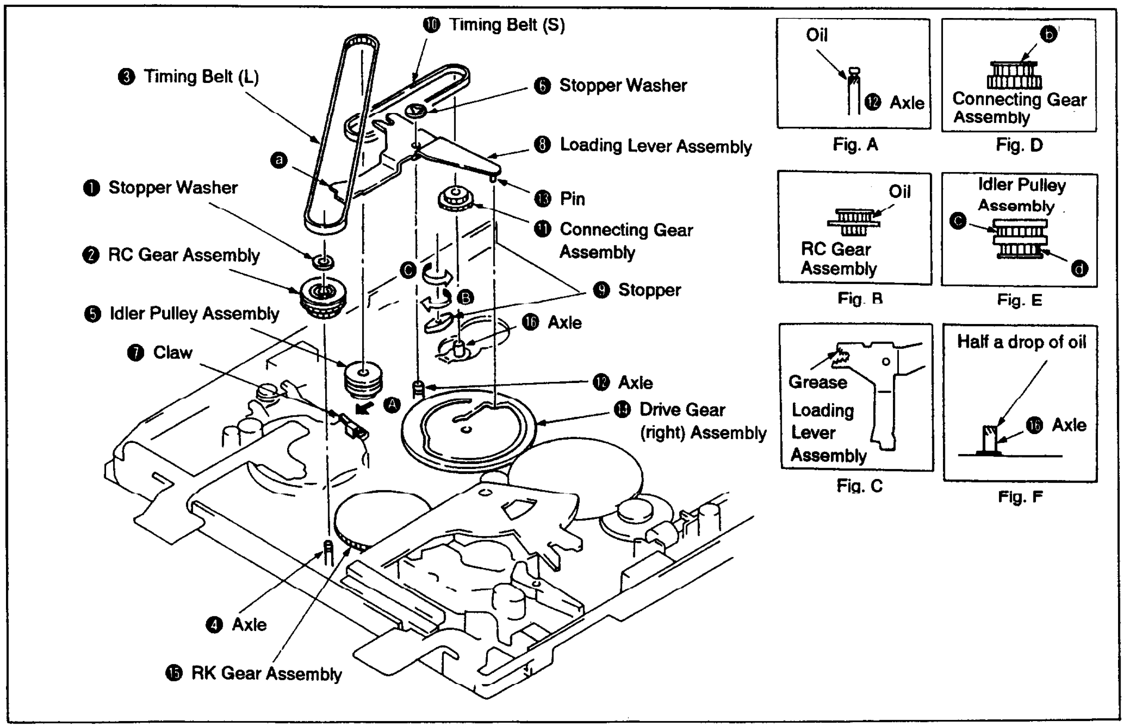

❿ Timing Belt (S)
❸ Timing Belt (L)
❻ Stopper Washer
❽ Loading Lever Assembly
ⓐ
❶ Stopper Washer
⓭ Pin
⓫ Connecting Gear Assembly
❷ RC Gear Assembly
Ⓒ
Ⓑ
❾ Stopper
❺ Idler Pulley Assembly
⓰ Axle
❼ Claw
⓬ Axle
Ⓐ
⓮ Drive Gear (right) Assembly
❹ Axle
⓯ RK Gear Assembly
Oil
⓬ Axle
Fig. A
ⓑ
Connecting Gear Assembly
Fig. D
Oil
RC Gear Assembly
Fig. B
Idler Pulley Assembly
ⓒ
ⓓ
Fig. E
Grease
Loading Lever Assembly
Fig. C
Half a drop of oil
⓰ Axle
Fig. F

Fig. 3-16.

3-16. IDLER PULLEY, TS BRAKE ASSEMBLY, LB GEAR ASSEMBLY, RK GEAR ASSEMBLY

1. Removal (See Fig. 3-17.)

1) Remove the DC motor (capstan motor) as described in section 3-3.
2) Remove the switch lever assembly as described in section 3-14.
3) Remove the timing belt (L), the RC gear assembly, the loading lever assembly, the timing belt (S) and the connecting gear assembly described in section 3-15.
4) Set the STOP mode.
5) Remove the stopper washer ❶, then remove the idler pulley ❷.
6) Open the claw ❸, then remove the TS brake assembly ❹.
7) Remove the torsion coil spring (LB) ❺.
8) Remove the stopper washer ❻, then remove the LB gear assembly ❼.
9) Remove the RK gear assembly ❽.

Note: When removing the idler pulley ❷, take care not to touch the flange section ⓐ. (See Fig. C.)

2. Installation (See Fig. 3-17.)

1) Apply half a drop of oil to the axle ❾ (See Fig. A).
2) Mount the RK gear assembly ❽ onto the axle ❾, keeping it in horizontal position.
3) Apply half a drop of oil to the axle ❿ (See Fig. B).
4) Mount the LB gear assembly ❼ onto the axle ❿ and secure it with the stopper washer ❻.
5) Insert the torsion coil spring (LB) ❺ into the axle ⓫, then hook it to the mechanism chassis notch ⓬ and to the tab ⓭.
6) Mount the TS brake assembly ❹ and close the claw ❸.
7) Apply half a drop of oil to the axle ⓰ (See Fig. D).
8) Mount the idler pulley ❷ onto the axle ⓰, then secure it with the stopper washer ❶.
9) Mount the timing belt (L), the RC gear assembly, the loading lever assembly, the timing belt (S) and the connecting gear assembly as described in section 3-15.
10) Mount the switch lever assembly as described in section 3-14.
11) Mount the DC motor (capstan motor) as described in section 3-3.

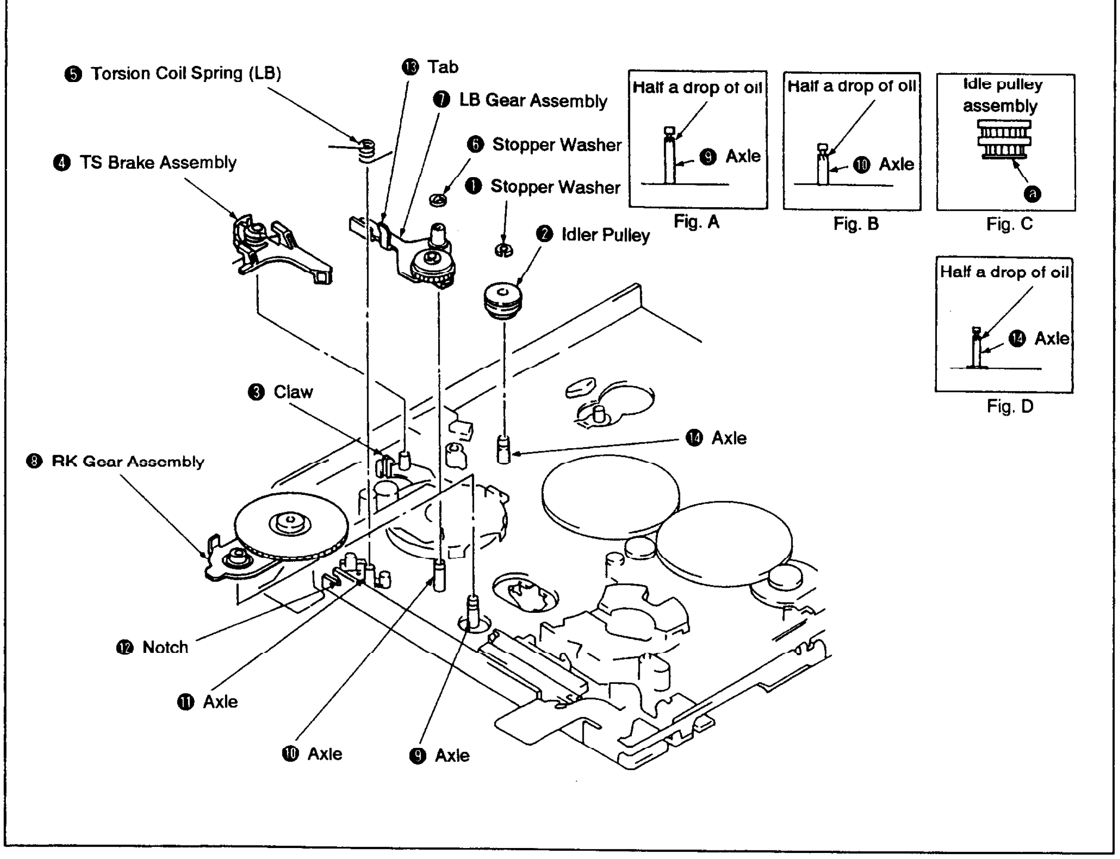

❺ Torsion Coil Spring (LB)
⓭ Tab
❼ LB Gear Assembly
❻ Stopper Washer
❹ TS Brake Assembly
❶ Stopper Washer
❷ Idler Pulley
❸ Claw
⓮ Axle
❽ RK Gear Assembly
⓬ Notch
⓫ Axle
❿ Axle
❾ Axle
Half a drop of oil
❾ Axle
Fig. A
Half a drop of oil
❿ Axle
Fig. B
Idle pulley assembly
ⓐ
Fig. C
Half a drop of oil
⓮ Axle
Fig. D

Fig. 3-17.

3-17. UL GEAR, UL BRAKE, UL ARM, LB PLATE SPRING

1. Removal (See Fig. 3-18.)

1) Remove the switch lever assembly as described in section 3-14.
2) Remove the stopper washer ❶, then remove the UL gear ❷.
3) Remove the UL arm ❸, the 1.6 mm-diameter poly washer ❹ and the LB plate spring ❺.
4) Remove the UL brake ❻.

2. Installation (See Fig. 3-18.)

1) Mount the UL brake ❻.
2) Apply half a drop of oil to the axle ❼ (See Fig. A).
3) Mount the LB plate spring ❺ to the axle ❼ as shown in Fig. B, then install the 1.6mm-diameter poly washer ❹.
4) Mount the UL arm ❸ to the axle ❼ so that the protrusion ❽ comes into the groove ❾ of the UL brake ❻.
5) Mount the UL gear ❷ to the axle ❼ and engage it with the gear of the drive gear (left) assembly ❿.
6) Install the stopper washer ❶.
7) Mount the switch lever assembly as described in section 3-14.

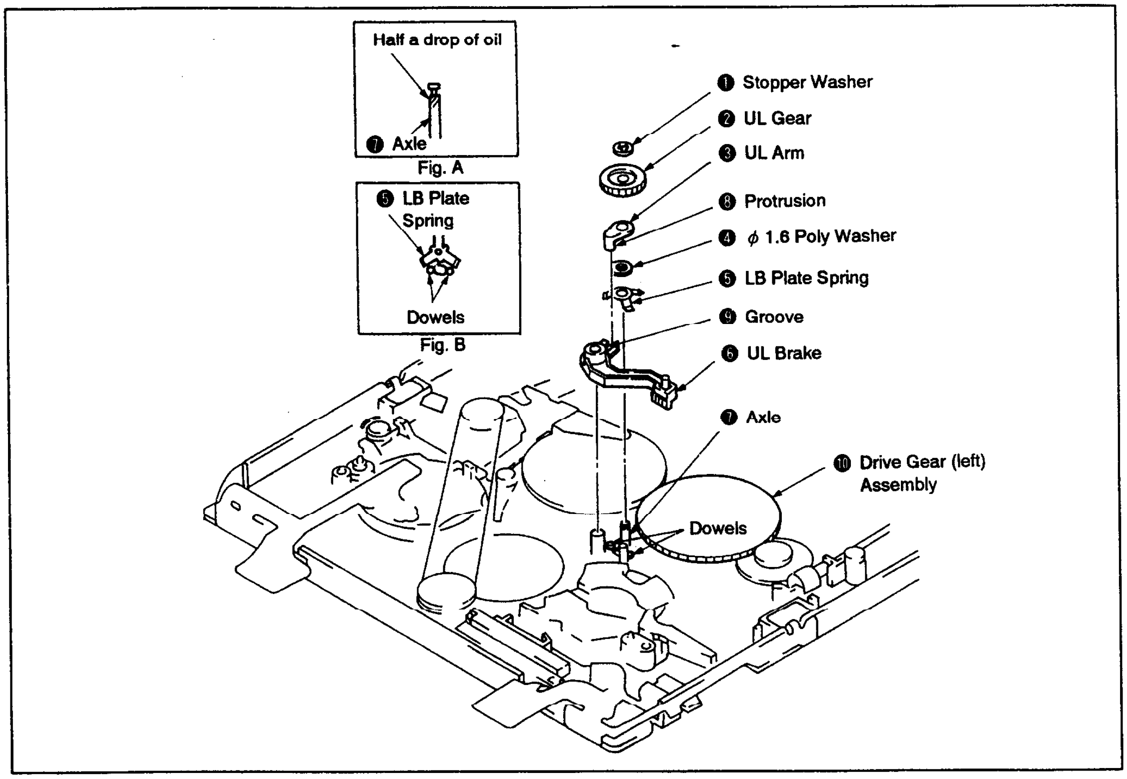

Half a drop of oil
❼ Axle
Fig. A
❺ LB Plate Spring
Dowels
Fig. B
❶ Stopper Washer
❷ UL Gear
❸ UL Arm
❽ Protrusion
❹ φ 1.6 Poly Washer
❺ LB Plate Spring
❾ Groove
❻ UL Brake
❼ Axle
❿ Drive Gear (left) Assembly
Dowels

Fig. 3-18.

3-18. COASTER (RIGHT) ASSEMBLY, DRIVE GEAR (RIGHT) ASSEMBLY

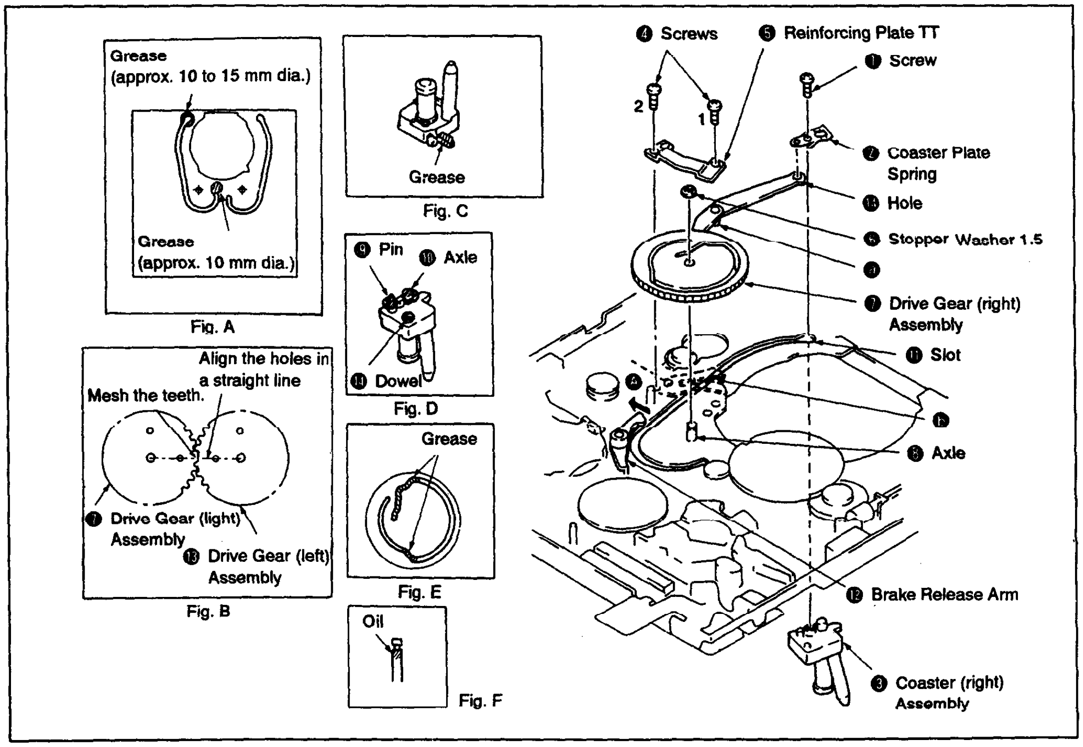
1. Removal (See Fig. 3-19.)

1) Remove the DC motor (capstan motor) as described in section 3-3.
2) Remove the drum unit as described in section 3-13.
3) Remove the switch lever assembly as described in section 3-14.
4) Remove the timing belt (L), the RC gear assembly and the loading lever assembly as described in section 3-15.
5) Set the STOP mode.
6) Remove the screw ❶, then remove the coaster plate spring ❷ and the coaster (right) assembly ❸.
7) Remove the two screws ❹, then remove the reinforcing plate TT ❺.
8) Remove the stopper washer 1.5 ❻, then remove the drive gear (right) assembly ❼.

2. Installation (See Fig. 3-19.)

1) Grease the points of the mechanism chassis shown in Fig A.
2) Apply half a drop of oil to the axle ❽ (See Fig. F).
3) Grease pin ❾, axle ❿ and dowel ⓮ of the coaster (right) assembly ❸ (See Fig. D).
4) Mount by aligning the pin ❾ and the axle ❿ with the slot ⓫ of the mechanism chassis.
5) Move the brake release arm ⓬ in the direction of the arrow 🅐 to put it out of the way.
6) Mount the drive gear (right) assembly ❼ to the axle ❽, and engage it with the drive gear (left) assembly ⓭ as shown in Fig. B.
7) Align the ⓐ part with the ⓑ part, and the hole ⓮ with the pin ❾ of the coaster (right) assembly ❸.
8) Install the stopper washer 1.5 ❻.
9) Mount by aligning the coaster plate spring ❷ with the axle ❿ of the coaster (right) assembly ❸ and pin ❾, then secure with the screw ❶.
10) Mount the reinforcing plate TT ❺ aligning it with the dowel ⓯, then tighten the two screws ❹ in the indicated order.
11) Grease the points indicated in Figs. C and E.
12) Mount the timing belt (L), the RC gear assembly and the loading lever assembly as described in section 3-15.
13) Mount the switch lever assembly as described in section 3-14.
14) Mount the drum unit as described in section 3-13.
15) Mount the DC motor (capstan motor) as described in section 3-3.

Note:
- Screw ❶ should be tightened with a tightening torque of approx. 500g•cm. If tightened too much, the coaster (right) assembly ❸ and the coaster plate spring ❷ will be deformed.
- After installing, be sure to perform tape path adjustment as described in section 4.



Grease
(approx. 10 to 15 mm dia.)
Grease
(approx. 10 mm dia.)
Fig. A
Align the holes in a straight line
Mesh the teeth.
❼ Drive Gear (light) Assembly
⓭ Drive Gear (left) Assembly
Fig. B
Grease
Fig. C
❾ Pin
❿ Axle
⓮ Dowel
Fig. D
Grease
Fig. E
Oil
Fig. F
❹ Screws
❺ Reinforcing Plate TT
❶ Screw
2
1
❷ Coaster Plate Spring
⓮ Hole
❻ Stopper Washer 1.5
ⓐ
❼ Drive Gear (right) Assembly
⓫ Slot
🅐
ⓑ
❽ Axle
⓬ Brake Release Arm
❸ Coaster (right) Assembly

Fig. 3-19.

3-19. COASTER (LEFT) ASSEMBLY, DRIVE GEAR (LEFT) ASSEMBLY

1. Removal (See Fig. 3-20.)

1) Remove the DC motor (capstan motor) as described in section 3-3.
2) Remove the drum assembly as described in section 3-13.
3) Remove the switch lever assembly and the pinch roller sub-arm assembly as described in section 3-14.
4) Remove the timing belt (L), the RC gear assembly and the loading lever assembly as described in section 3-15.
5) Remove the coaster (right) assembly and the drive gear (right)assembly as described in section 3-18.
6) Remove the screw ❶, then remove the coaster plate spring ❷ and the coaster (left) assembly ❸.
7) Remove the two screws ❹, then remove the reinforcing plate SS assembly ❺.
8) Remove the stopper washer 1.5 ❻, then remove the drive gear (left) assembly ❼.

2. Installation (See Fig. 3-20.)

1) Grease the points of the mechanism chassis shown in Fig A.
2) Apply half a drop of oil to the axle ❽ (See Fig. E).
3) Grease pin ❾, axle ❿ and dowel ⓰ of the coaster (left) assembly ❸ (See Fig. B).
4) Mount by aligning the pin ❾ and the axle ❿ with the slot ⓫ of the mechanism chassis.
5) Fit the drive gear (left) assembly ❼ to the axle ❽, and mount so that the gear engages with the wheel gear ⓭ and the UL gear ⓮.
6) Align the ⓐ part with the slot ⓫, and the hole ⓮ with the pin ❾ of the coaster (left) assembly ❸.
7) Install the stopper washer 1.5 ❻.
8) Mount by aligning the coaster plate spring ❷ with the axle ❿ and pin ❾ of the coaster (left) assembly ❸, then secure with the screw ❶.
9) Mount the reinforcing plate SS assembly ❺ aligning it with the dowel ⓯, then tighten the two screws ❹ in the indicated order.
10) Grease points indicated in Figs. C and D.
11) Mount the coaster (right) assembly and the drive gear (right)assembly as described in section 3-18.
12) Mount the timing belt (L), the RC gear assembly and the loading lever assembly as described in section 3-15.
13) Mount the switch lever assembly and the pinch roller sub arm assembly as described in section 3-14.
14) Mount the drum assembly as described in section 3-13.
15) Mount the DC motor (capstan motor) as described in section 3-3.

Note:
- Screw ❶ should be tightened with a tightening torque of approx. 500g•cm. If tightened too much, the coaster (right) assembly ❸ and the coaster plate spring ❷ will be deformed.
- After installing, be sure to perform tape path adjustment as described in section 4.

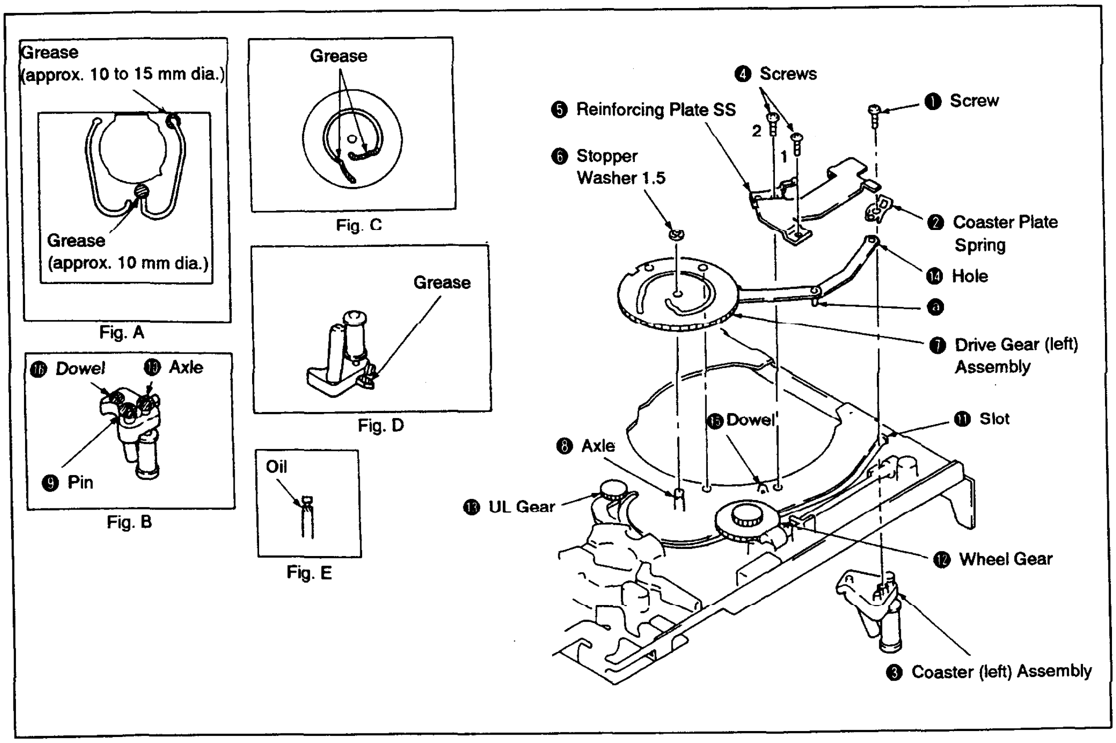

Grease
(approx. 10 to 15 mm dia.)
Grease
(approx. 10 mm dia.)
Fig. A
⓰ Dowel
❿ Axle
❾ Pin
Fig. B
Grease
Fig. C
Grease
Fig. D
Oil
Fig. E
❹ Screws
❺ Reinforcing Plate SS
2
1
❶ Screw
❻ Stopper Washer 1.5
❷ Coaster Plate Spring
⓮ Hole
ⓐ
❼ Drive Gear (left) Assembly
⓯ Dowel
⓫ Slot
❽ Axle
⓭ UL Gear
⓬ Wheel Gear
❸ Coaster (left) Assembly

Fig. 3-20.

3-20. LOADING MOTOR, BRAKE RELEASE ARM, WHEEL GEAR, WORM ASSEMBLY

1. Removal (See Fig. 3-21.)

1) Remove the DC motor (capstan motor) as described in section 3-3.
2) Remove the switch lever assembly and the pinch roller sub arm assembly as described in section 3-14.
3) Remove the timing belt (L), the RC gear assembly and the loading lever assembly as described in section 3-15.
4) Remove the drive gear (right) assembly as described in section 3-18.
5) Remove the drive gear (left) assembly as described in section 3-19.
6) Remove the two screws ①, then remove the loading motor assembly ②.
7) Remove the brake release arm ③.
8) Remove the stopper washer ④, then remove the wheel gear ⑤.
9) Remove the worm assembly ⑥ from the six claws ⑦.

2. Installation (See Fig. 3-21.)

1) Mount the worm assembly ⑥, matching it to the six claws ⑦.
2) Grease the shaded parts of the worm assembly ⑥ (five places) (see Fig A).
3) Apply half a drop of oil to the axle ⑧ (See Fig. B).
4) Fit the wheel gear ⑤ to the axle ⑧ and engage it with the gear of the worm assembly ⑥.
5) Mount the brake release arm ③.
6) Grease the whole perimeter of the gear of the loading motor assembly ②.
7) Align the loading motor assembly ② with the mechanism chassis and secure it with the two screws ①.
8) Mount the drive gear (left) assembly as described in section 3-19.
9) Mount the drive gear (right) assembly as described in section 3-18.
10) Mount the timing belt (L), the RC gear assembly and the loading lever assembly as described in section 3-15.
11) Mount the switch lever assembly and the pinch roller sub arm assembly as described in section 3-14.
12) Mount the DC motor (capstan motor) as described in section 3-3.

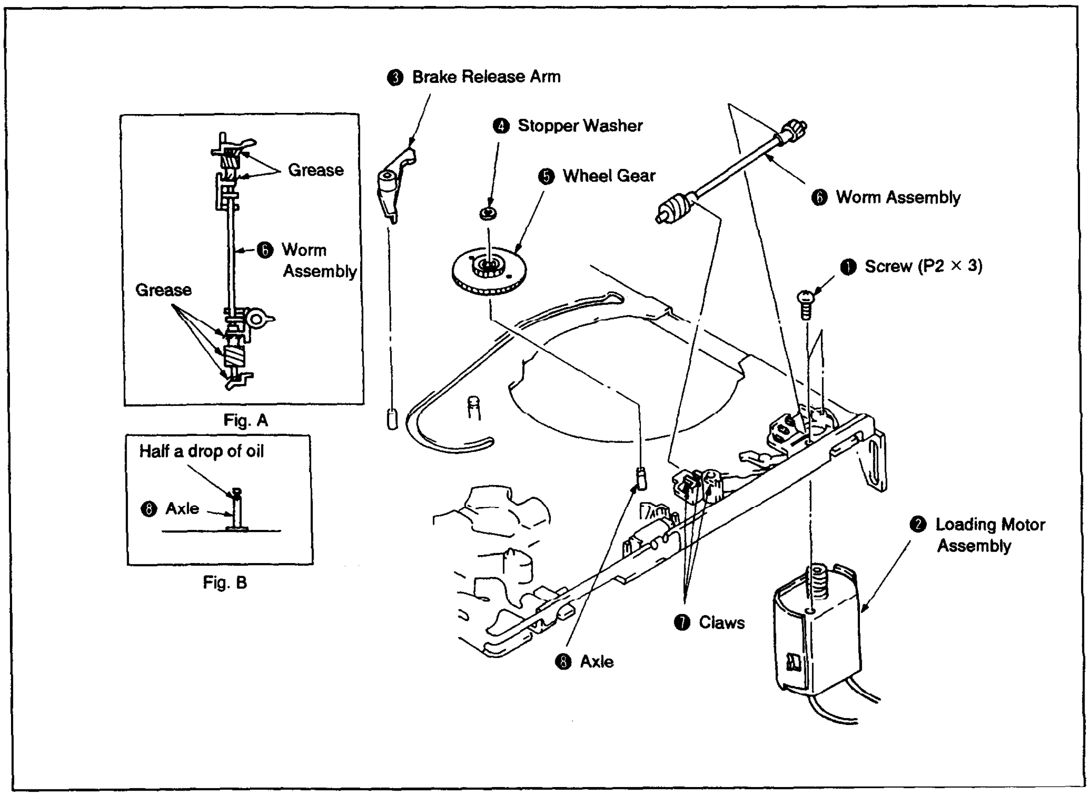


Fig. A

Fig. B

Fig. 3-21.

3-21. ROTARY UPPER DRUM REPLACEMENT

1. Removal

- If possible, make a recording before removal.

1) Detach the six solderings ⓐ, then use a pair of tweezers or the like to confirm that the terminals passing through the board holes from below can move freely.
2) Remove the two screws ❶ (See Fig. 3-22).
3) Mount the jig ❹ (Ref. No. J-7) with the two supplied screws ❷, then screw the attached hexagon socket screws ❸ to the jig ❹. The rotary upper drum ❺ will move upward and come off (See Fig. 3-23).

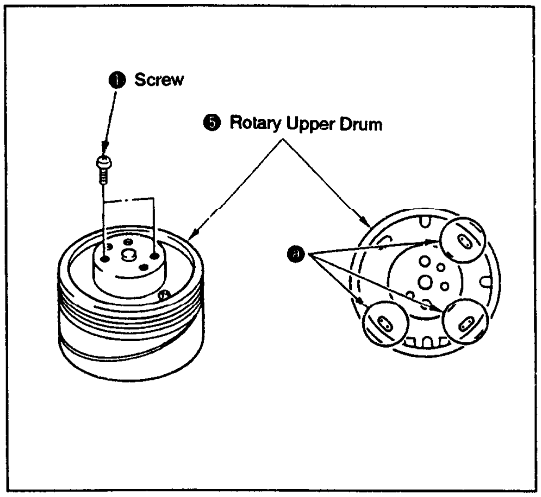


Fig. 3-22.

2. Installation

1) Wipe clean the flange surface and the rotary upper drum ❺ surface that makes contact with it, and confirm that they are free from dirt and scratches.
2) Insert the jig ❼ (Ref. No. J-7) into the drum positioning hole, then set the rotary upper drum ❺ by passing the jig through its positioning hole ❻.
   Note: Confirm that the terminals ❽ protrude slightly from the rotary upper drum board holes (See Fig. 3-24).
3) Remove the jig ❼ and push down the rotary upper drum ❺ gently by hand. If it does not go all the way down, secure it temporarily by tightening the two hexagon socket screws ❶ alternately.
4) Insert the jig ❼ into the positioning hole ❻ again and confirm that it goes in smoothly. If it does not, loosen the two screws ❶, repeat step 3 of the Removal paragraph and restart the setting procedure.
5) Tighten the screws ❶.
6) Solder the terminals ❽ (ⓐ in Fig. 3-22).
   Note: Take care that no solder flows below the board.

Note: After installing, be sure to perform tape path adjustment as described in section 4.

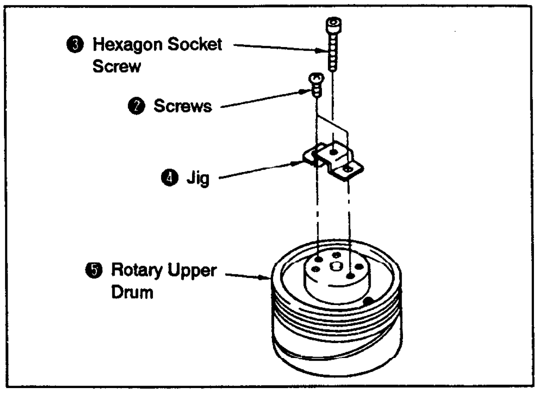


Fig. 3-23.

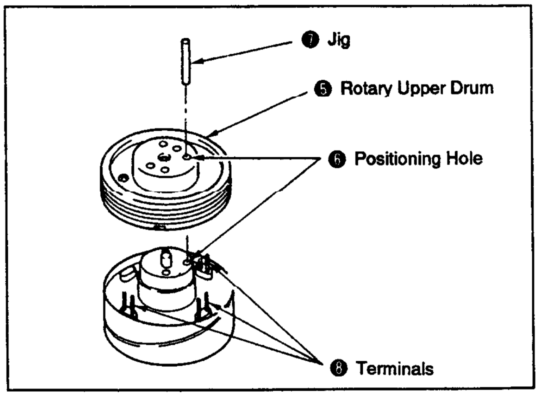


Fig. 3-24.

3-22. FWD BACK TENSION (See Fig. 3-25.)

1) Set the torque cassette (Ref. No. J-6).
2) Set the FWD mode and confirm that S reel table torque value is within 9 to 13 g•cm.
3) If the torque value does not meet the specification, adjust the adjust arm ❶.

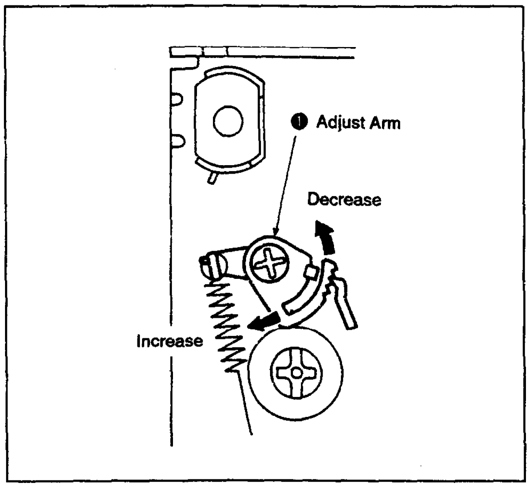


Fig. 3-25.

3-23. REEL TORQUE CHECK

1) Set the torque cassette.
2) Set the FWD mode and confirm that T reel table torque value is within 7 to 15 g•cm.
3) Set the REV mode and confirm that S reel table torque value is within 29 ± 6 g•cm.
4) Set the REV mode and confirm that T reel table torque value is within 13 to 25 g•cm.
5) If a torque value does not meet the specifications above, replace the corresponding reel table.

4. TAPE PATH ADJUSTMENT

[The Track Shift Mode]

In the 8 mm video system, instantaneous tape speed control is performed using four kinds of pilot signals, and high-precision tracking is achieved through the ATF (Automatic Track Finding) system. This makes a tracking control knob unnecessary and allows for precise tracing.

On the other hand, however, tape path adjustment presents some difficulties when the ATF system is used. Namely, since the ATF system will automatically compensate to some degree for head tracing errors, thorough adjustment is not possible.

This can be solved by setting the track shift mode for tracking fine adjustment. ATF will be compulsorily activated, shifting the tracking amount by a fixed amount (approx. 1/4) and thus making tracking fine adjustment easy. Furthermore, no track shift jigs are required.

4-1. TRACK SHIFT MODE SETTING

[Setting Procedure]

- Connect the TEST A and TEST B terminals to the COM terminal.
  Example:
  NTSC ········ GV-8
  PAL ·········· GV-8E
  Connect Pins ① and pin ③ of CN017 on the { SV-34 board (GV-8) / SV-35 board (GV-8E) } to pin ② of it. (See Fig. 4-1)

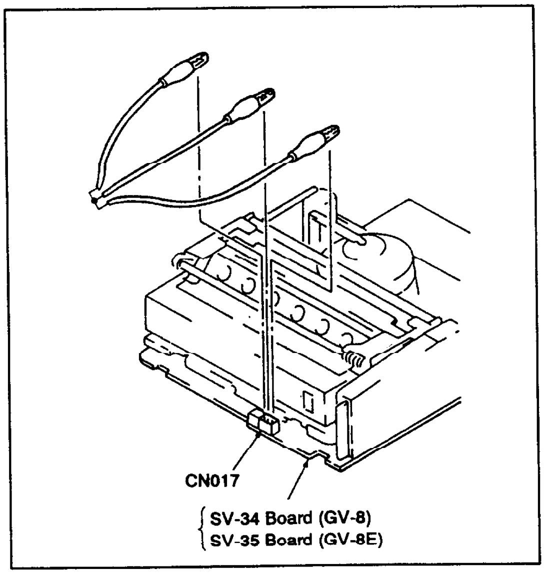
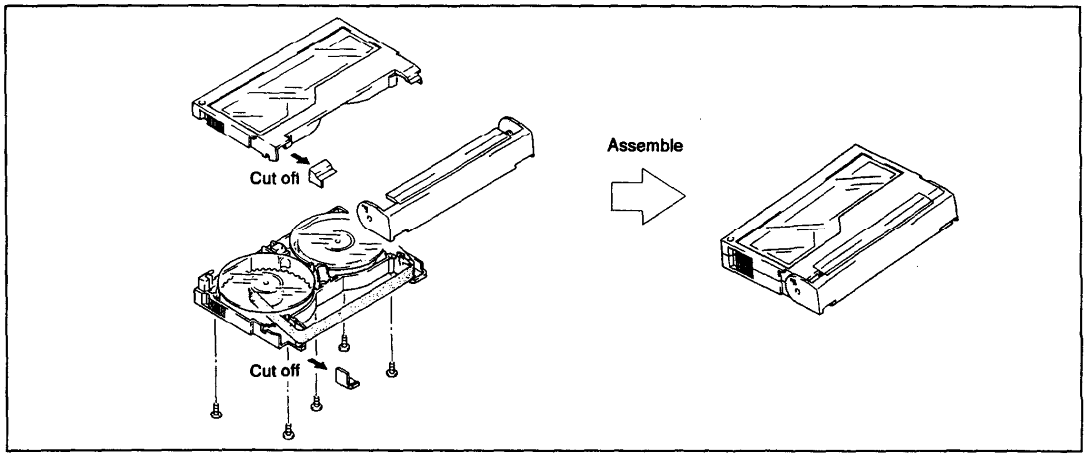


Fig. 4-1.

[Note on Adjustment of No.7 Guide (TG-7)]

The height adjustment screw for No.7 guide (TG-7) is located at some distance from the guide (refer to Fig. 4-2).
Therefore, when performing section 4-6. No.7 Guide (TG-7) Adjustment it is convenient to use the alignment tape for tracking (Ref. No. J-5), modified as follows, and perform adjustment in playback mode.


Cut off
Cut off
Assemble

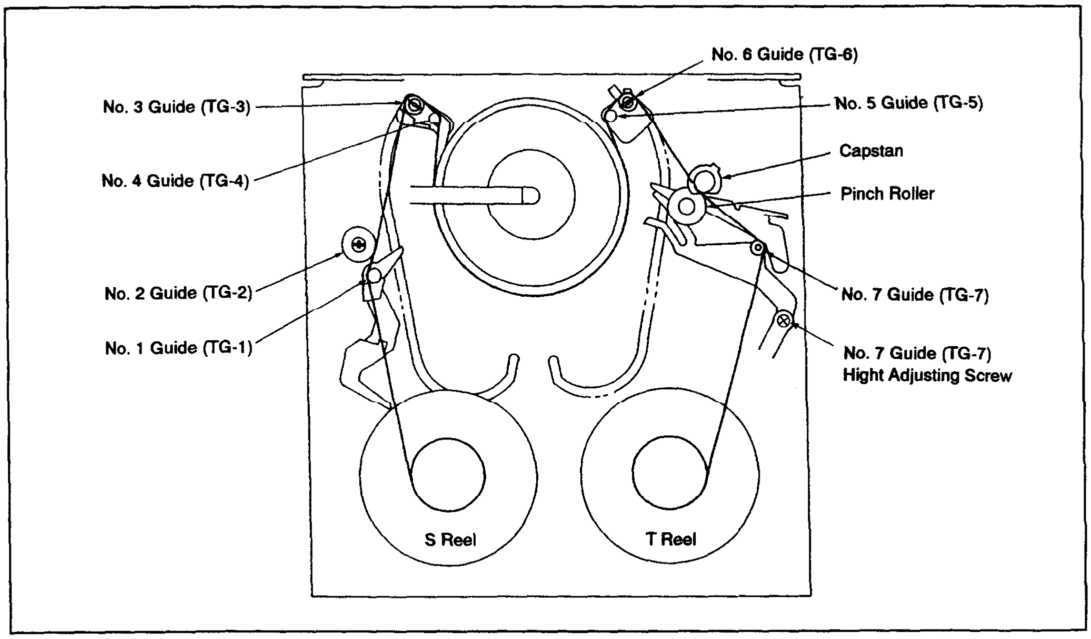

No. 6 Guide (TG-6)
No. 3 Guide (TG-3)
No. 5 Guide (TG-5)
Capstan
No. 4 Guide (TG-4)
Pinch Roller
No. 2 Guide (TG-2)
No. 7 Guide (TG-7)
No. 1 Guide (TG-1)
No. 7 Guide (TG-7)
Hight Adjusting Screw
S Reel
T Reel

Fig. 4-2.

4-2. PREPARATIONS FOR ADJUSTMENT

1) Clean tape path surfaces (tape guides, drum, capstan shaft, pinch roller) (See Fig. 4-2).
2) Connection of oscilloscope and output method of waveform.
   CH 1: RF signal output of the drum head (V RF OUT)
   Method for signal output:
   Short-circuit the external trigger output (RF SW. P) and GND.

   Example:
   NTSC ····· GV-8
   PAL ······· GV-8E
   CH 1: Pin ③ (V RF OUT) of CN018 on the
   { SV-34 board (GV-8)
   { SV-35 board (GV-8E)
   Method for signal output:
   Short-circuit pin ① (GND) and pin ② (RF SW.P) of CN018 on the
   { SV-34 board (GV-8)
   { SV-35 board (GV-8E)
3) Play back the alignment tape for tracking adjustment (Ref. No. J-5).
4) Confirm that both the entrance and exit side RF waveforms of the oscilloscope are flat (See Fig. 4-4). If they are not, adjust as follows.

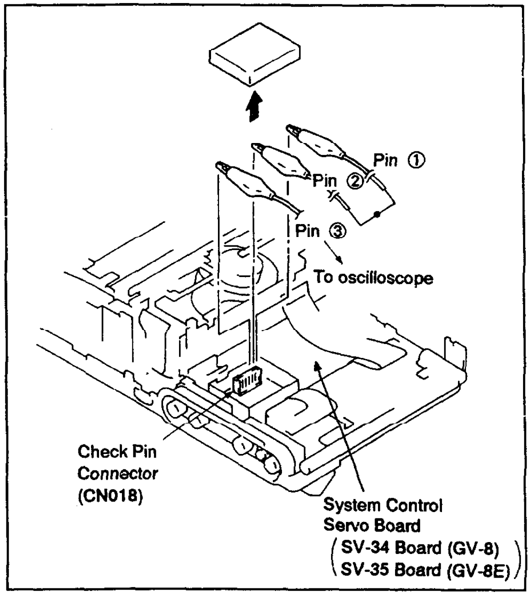

Pin ①
Pin ②
Pin ③
To oscilloscope
Check Pin Connector (CN018)
System Control Servo Board
(SV-34 Board (GV-8)
SV-35 Board (GV-8E))

Fig. 4-3.

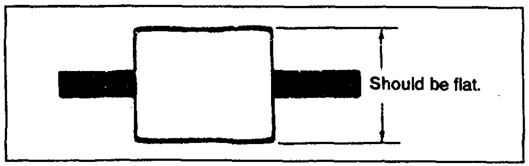

Should be flat.

Fig. 4-4.

4-3. TRACKING ADJUSTMENT (See Fig. 4-5.)

1) Play back the alignment tape for tracking adjustment.
2) Pass a hexagonal wrench, screwdriver (Ref. No. J-11) or the like through the hole ❶, loosen the lockscrew ❷ a little, then make the entrance side waveform flat by turning the No. 3 guide (TG-3) ❸.
3) Pass a hexagonal wrench, screwdriver or the like through the hole ❹, loosen the lockscrew ❺ a little, then make the exit side waveform flat by turning the No. 6 guide (TG-6) ❻.

Note: Take care not to loosen lockscrews too much, since guides come loose easily.

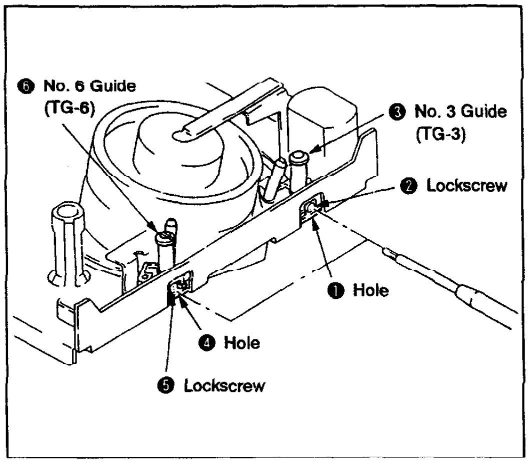

❻ No. 6 Guide (TG-6)
❸ No. 3 Guide (TG-3)
❷ Lockscrew
❶ Hole
❹ Hole
❺ Lockscrew

Fig. 4-5.

4-4. TRACKING FINE ADJUSTMENT (See Figs. 4-5. and 4-6.)

1) Play back the alignment tape for tracking adjustment and set the track shift mode.
2) Confirm whether the waveform is flat. If it is not, turn the No. 3 (TG-3) and No. 6 (TG-6) guides so that it becomes flat.
3) Fix the No. 3 guide ❸ by tightening its lockscrew ❷. Then confirm that the entrance side waveform has not changed.
4) Fix the No. 6 guide ❻ by tightening its lockscrew ❺. Then confirm that the exit side waveform has not changed.

Note: The set screws ❷ and ❺ should be tightened with a tightening torgue of approx. 200g•cm ± 10%.
If tightened too much, there is danger of damaging the thread.

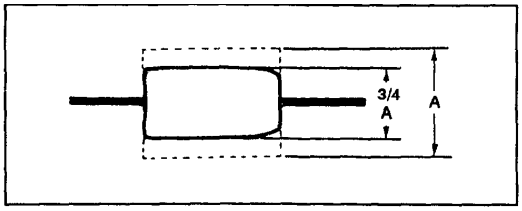


Fig. 4-6.

4-5. No. 2 GUIDE (TG-2) ADJUSTMENT

When the No. 2 guide has been turned or replaced, perform height presetting before this adjustment.

4-5-1. No. 2 Guide (TG-2) Height Presetting (See Fig. 4-7.)

1) Adjust the height from the mechanism chassis upper surface to the TG-2 upper flange ❶ upper surface to 18.6 mm by rotating the TG-2 upper flange ❶.

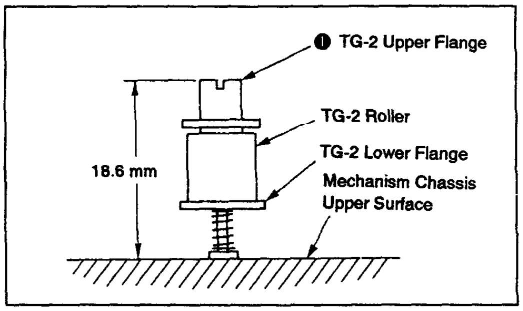


Fig. 4-7.

[Reference]
This U mechanism is equipped with four adjustable guides (TG-2, 3, 6 and 7). To raise or lower the respective guide rotate the corresponding adjustment screw as shown below.

Guide	Guide adjustment	Rotating direction of adjustment screw
TG-2, 3, 6	Raise	Counterclockwise
	Lower	Clockwise
TG-7	Raise	Counterclockwise
	Lower	Clockwise

4-5-2. No. 2 Guide (TG-2) Adjustment (See Figs. 4-8. and 4-9.)

1) Play back a thin tape like the P6-120MP, etc. and set the REV mode.
2) Confirm that the tape is not bent at the lower flange ❷ of the No. 2 guide (TG-2) ❶ (See Fig. 4-8). If it is, turn the upper flange ❸ of the No. 2 guide (TG-2) ❶ clockwise with a screwdriver, lowering it until the tape is straightened.
3) Play back the alignment tape for tracking adjustment.
4) Perform tracking adjustment and tracking fine adjustment as described in sections 4-3. and 4-4.
5) In the track shift mode, CUE/REV the tape, then play it back and confirm that the RF waveform rises flat within 2 seconds.
6) If the waveform is not normal (See Fig. 4-9), turn the upper flange ❸ of the No. 2 guide (TG-2) ❶ 90° counter-clockwise and repeat step 5.
   Repeat steps 5 and 6 until a normal waveform is obtained. Then, confirm that the tracking waveform has not changed. If it has, perform fine adjustment of entrance side tracking and repeat step 5.

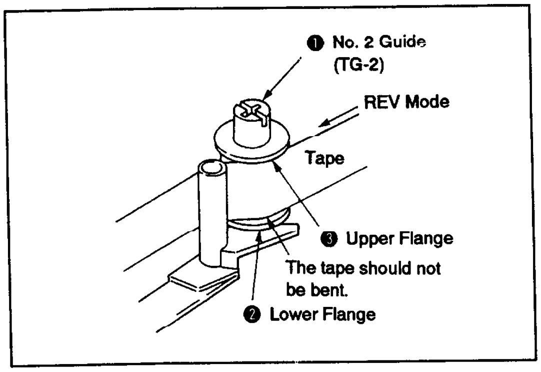

❶ No. 2 Guide (TG-2)
REV Mode
Tape
❸ Upper Flange
The tape should not be bent.
❷ Lower Flange

Fig. 4-8.

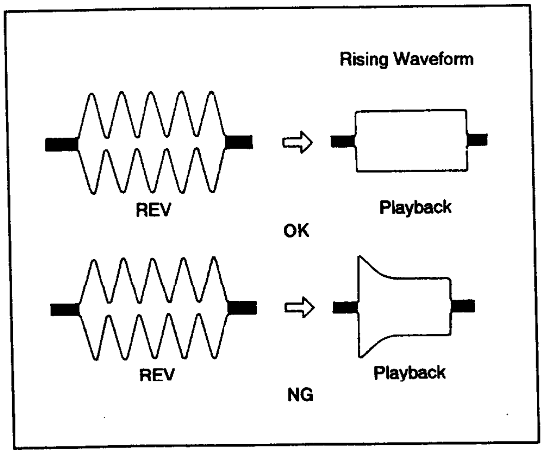

Rising Waveform
REV
Playback
OK
REV
Playback
NG

Fig. 4-9.

4-6. No. 7 GUIDE (TG-7) ADJUSTMENT (See Fig. 4-10.)

1) Play back the alignment tape for tracking adjustment and set the REV mode.
2) Confirm that the tape is not bent between the No. 6 guide (TG-6) ❶ and the capstan ❷ . If it is, turn the hight adjusting screw ❹ of the No. 7 guide (TG-7) ❸ until the tape is straightened.
3) Set the playback mode again and confirm that the tape is not bent between the capstan ❷ and the hight adjusting screw ❹ of the No. 7 guide (specification:0.5 mm or less) . If the tape is bent beyond the specification, turn the No. 7 guide (TG-7) ❸ until bending is within the specification (0.5 mm).
   If in the REV mode tape bending between the No. 6 guide (TG-6) ❶ and the capstan ❷ is 0.3 mm or less, adjustment can be considered completed.

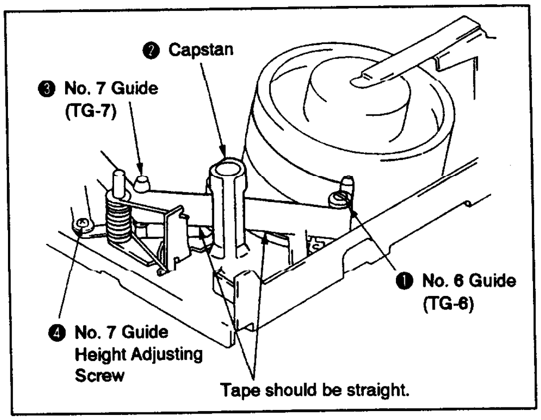

❷ Capstan
❸ No. 7 Guide (TG-7)
❶ No. 6 Guide (TG-6)
❹ No. 7 Guide Height Adjusting Screw
Tape should be straight.

Fig. 4-10.

4-7. CUE AND REV WAVEFORM CHECK (See Fig. 4-11.)

1) Play back the alignment tape for tracking adjustment and set the REV mode. Confirm that waveform peaks maintain a constant pitch of 5 seconds or more (See Fig. 4-11). In case pitch is not constant, perform section 4-4. Tracking Fine Adjustment and section 4-6. No. 7 Guide Adjustment.
2) Set the CUE mode. Confirm that waveform peaks still maintain a constant pitch of 5 seconds or more (See Fig. 4-11). Otherwise, perform section 4-4. Tracking Fine Adjustment.

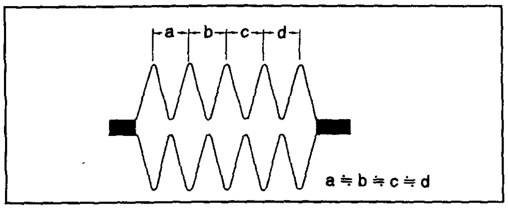


Fig. 4-11.

4-8. CHECK AFTER ADJUSTMENT

4-8-1. Tracking Check

1) Confirm that the amplitude of RF waveform is reduced to approx. 3/4 when the track shift mode is set (See Fig. 4-12).
2) Then, confirm that the minimum amplitude value (EMIN) is 65% of the maximum value (EMAX) or larger (See Fig. 4-13).
3) Confirm that no large fluctuations occur on the waveform (See Fig. 4-14).

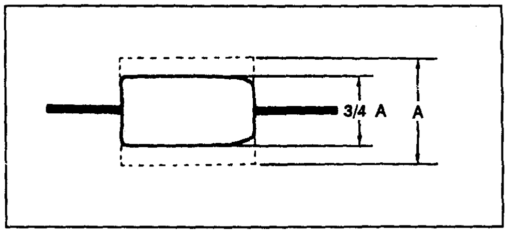


Fig. 4-12.

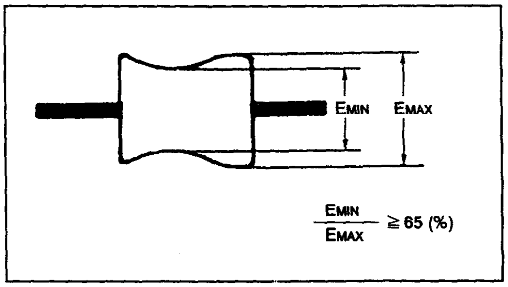


Fig. 4-13.

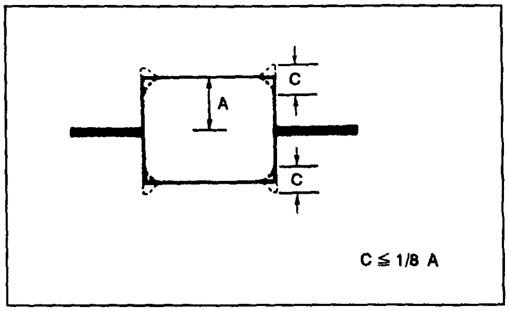
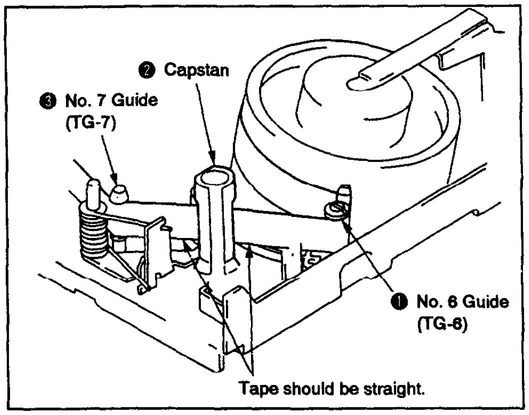


Fig. 4-14.

4-8-2. Rising Check (See Fig. 4-15.)

1) Play back the alignment tape for tracking adjustment.
2) Cancel the track shift mode.
3) Eject the tape, then load it again.
4) Set the playback mode and confirm that the RF waveform rises flat within 2 seconds. Also confirm that the tape is not bent around the pinch roller (See Fig. 4-15).
5) CUE/REV and FF/REW the tape, then play it back and confirm that the RF waveform rises flat within 2 seconds. Also confirm that the tape is not bent around the pinch roller.
6) Repeat steps 3) to 5) once more.

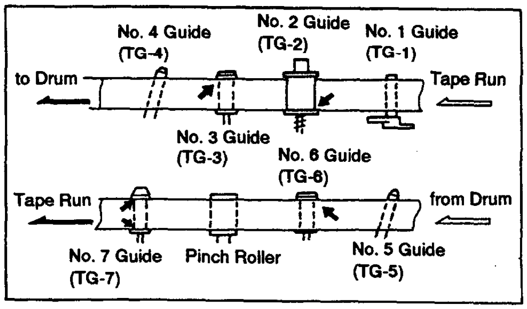


❷ Capstan
❸ No. 7 Guide
(TG-7)
❶ No. 6 Guide
(TG-6)
Tape should be straight.

Fig. 4-15.

4-8-3. Tape Path Check (See Fig. 4-16.)

1) Play back a thin tape like the P6-120MP (NTSC) or P5-90MP (PAL), etc. and confirm that no tape rising occurs, and that curling is less than 0.3 mm, at the lower flange of the No. 2 guide, the upper flange of the No. 3 guide, the upper flange of the No. 6 guide and the No. 7 guide upper and lower flanges.
2) Confirm that no tape rising occurs and that curling is less than 0.3 mm at the flanges of all guide when pressing the FF button in the playback mode to set the CUE mode, or the REW button to set the REV mode.



No. 4 Guide
(TG-4)
No. 2 Guide
(TG-2)
No. 1 Guide
(TG-1)
to Drum
Tape Run
No. 3 Guide
(TG-3)
No. 6 Guide
(TG-6)
Tape Run
from Drum
No. 7 Guide
(TG-7)
Pinch Roller
No. 5 Guide
(TG-5)

Fig. 4-16.